

# SIEMENS

## UROSKOP D2/D3

**SP**

### Installation Instructions for Service Contractors and Siemens Service

#### Register 3

RLL5-310.031.03.03.02

Replaces: RLL5-310.031.03.02.02

English

03.96

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### Safety notes

When performing procedures and tests, observe the product-specific safety notes in the documentation as well as the general safety notes in register 2 of the TI binder.

### Tolerance values

General tolerances for dimensions according to ISO 2768

Limits of nominal dimension range	3 mm to 6 mm	6 mm to 30 mm	30 mm to 120 mm	120 mm to 400 mm	400 mm to 1000 mm	1000 mm to 2000 mm	2000 mm to 4000 mm
Permiss. tol.	$\pm 0.5$ mm	$\pm 1$ mm	$\pm 1.5$ mm	$\pm 2.5$ mm	$\pm 4$ mm	$\pm 6$ mm	$\pm 8$ mm

These tolerances apply to all dimensions indicated in these instructions if no other tolerance is indicated explicitly after the value.

A tolerance of  $\pm 10$  % is permissible for torque data.

### Required documentation

- Installation Certificate RLL5-310.039.01...

### Required tools, measuring instruments and devices

**Note:** All tools, measuring instruments and devices listed, with the exception of the "usual installation tools" are indicated and specified in the ARTD (Part 3).

- Usual installation tools
- Spirit level (accuracy of measurement 1.0 mm per meter)
- Torque wrench, 25 - 130 Nm 34 24 561
- ESD equipment, type 8501-3M 97 02 606 Y 3121
- Loctite 221 20 48 874 RV 090

### Installation aids

Transport trolley/basic unit 9784 505 G5353  
 Installation device/MTS-I 8763 872 G2122  
 The service contractor will provide these aids for the installations he performs.

**Note:** If the installation is not performed by the service contractor, the above-mentioned installation aids must be available on site.

## Unpacking (when packed in crates)

Always note the directional arrows on the crates when shipping, warehousing and unpacking.

To avoid accidents and damage to the contents, use only suitable tools (nail puller) to open the crates.

Remove only the nails from the crate which have either cardboard or metal washers under their heads.

**Warning!** *To avoid hazardous conditions, pull nails out completely and discard properly. Wear suitable safety shoes! Each crate is additionally secured using metal straps. Always wear suitable eye protection when cutting straps, since the cut ends can snap back in an unpredictable manner.*

## Transport routes

The condition of the transport routes through the building, and the condition and configuration of the room in which the unit is to be installed must conform to the drawings from Medical Engineering Group and the specifications of the "General Installation and Shipping Conditions - Medical Engineering Group.

## Transport safety devices

All **red** painted parts on the unit and on the subassemblies are transport safety devices which may be removed only according to instructions.

## Replacing damaged or missing screws

Damaged or missing screws must only be replaced by steel screws as specified in the installation drawings that conform to DIN 267 and have the specified tensile strength.

**All Allen screws must be tensile strength class 8.8, provided no other value is stated in the instructions.**

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## Specially marked text

All texts marked with "**Attention!**" contain information regarding potential hazards and steps to be taken to avoid such hazards.

All texts marked with "**Note:**" contain additional information regarding the following work step. It is intended to clarify the step or to indicate ways to avoid predictable problems.

The service contractor and the responsible SIEMENS engineer must confirm in the installation certificate that all texts, settings and installation steps marked with " << " have been carried out.

## Colors used

White	Spray cans: 84 27 734 RE999	Paint stick: 34 44 403
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## Cleaning

The unit must always be switched off or disconnected from power before cleaning.

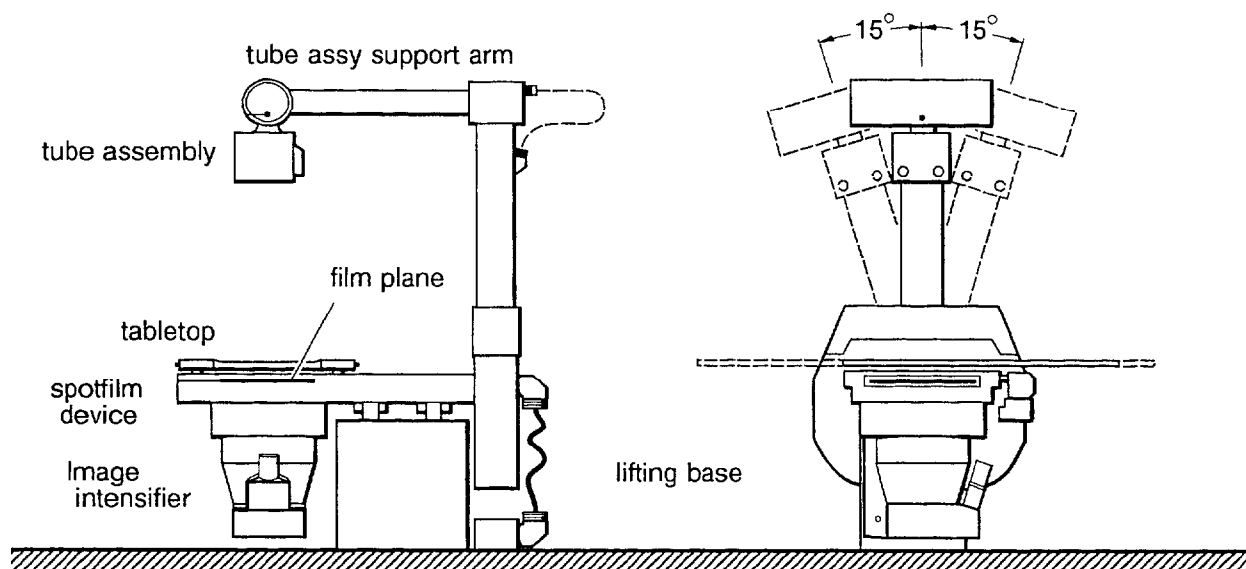
Use only water or a lukewarm mixture of a household cleaner diluted with water to clean the unit.

Do not use abrasive cleansers or organic solvents such as alcohol/gasoline used for cleaning purposes, or spot remover.

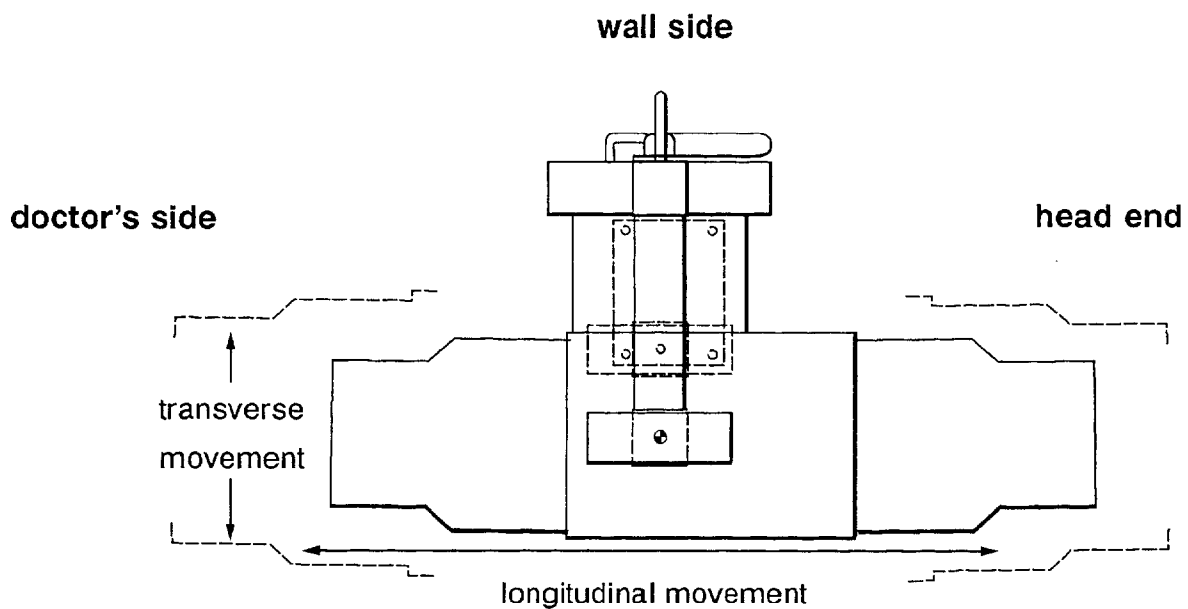
Do not spray water on the unit.

For further information, refer to the Instructions "Cleaning/Disinfecting".

## Designation of components



## Designation of direction



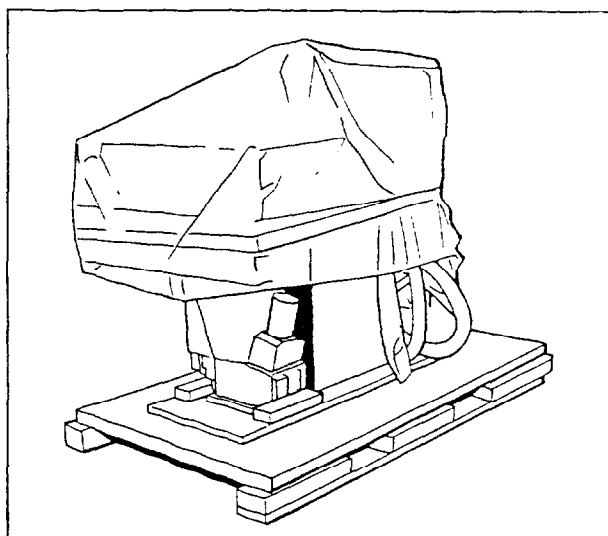


Fig. 1

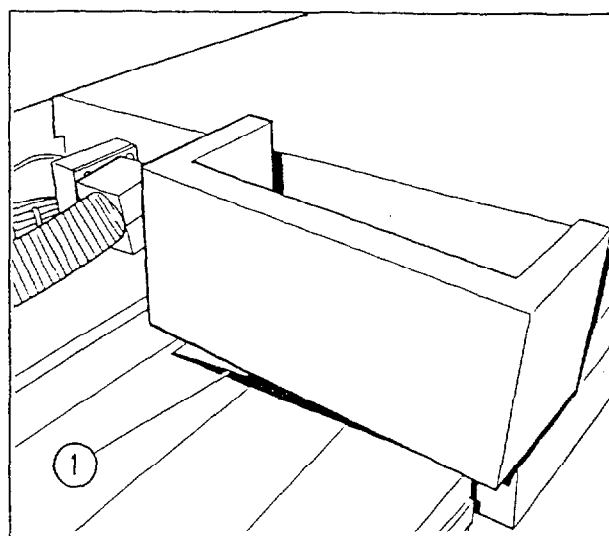


Fig. 2

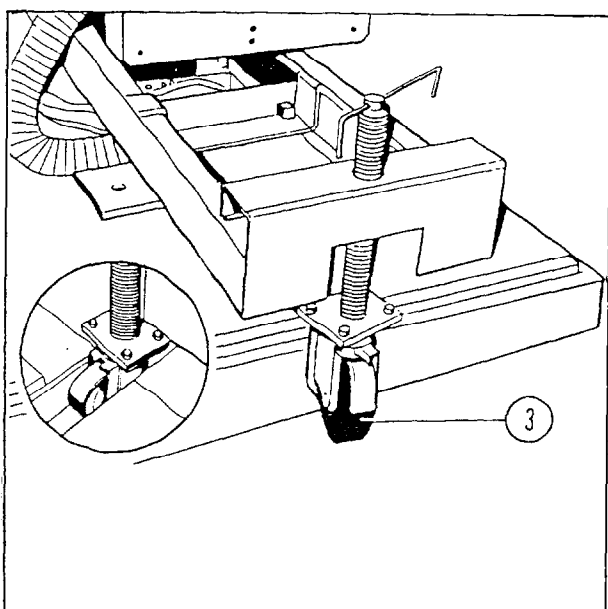


Fig. 3

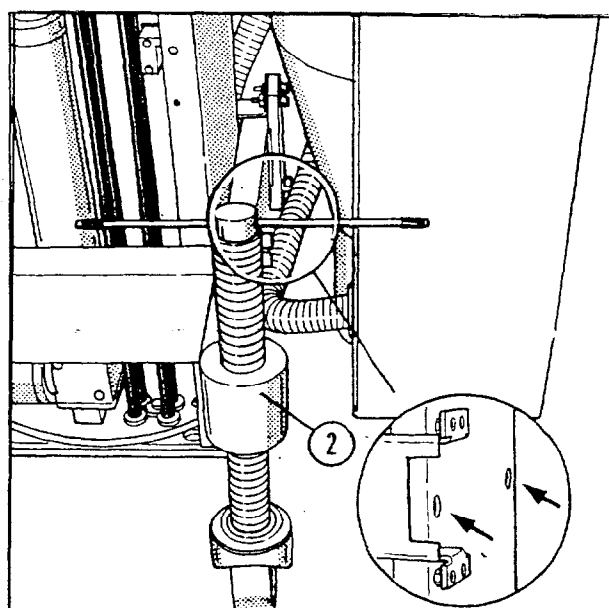


Fig. 4

## Installing the basic unit

- ◀ • Remove the side panels and the cover of the transport crate, if present (Fig.1).
- ◀ • Remove the support box (1/ Fig.2) above the recess of the transport pallet and set it aside for further use.
- ◀ • Attach the fork-type part of the transport trolley with the single transport roller (3) to the unit according to Fig.3; align the transport roller (3) in the recess according to the figure.
- ◀ • Attach the trolley part with the two transport rollers (2/ Fig.4) to the fork-type part of the transport trolley using 8 Allen screws; the four pins of the two transport trolley parts must lock in the corresponding holes (✓) on the unit (detail/ Fig.4).

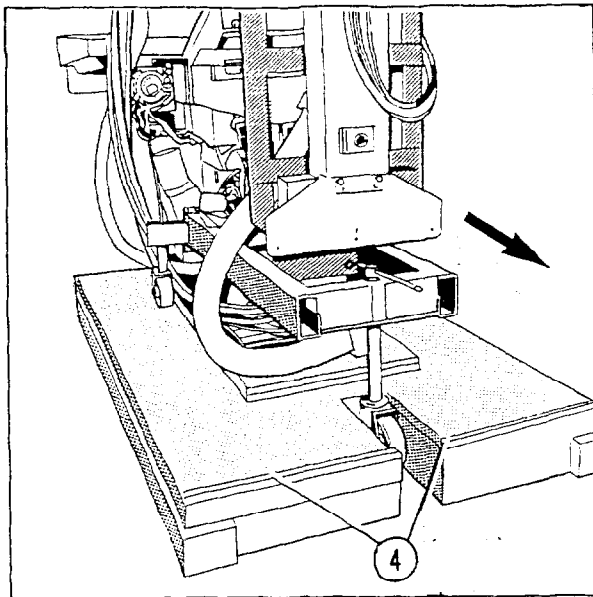


Fig. 5

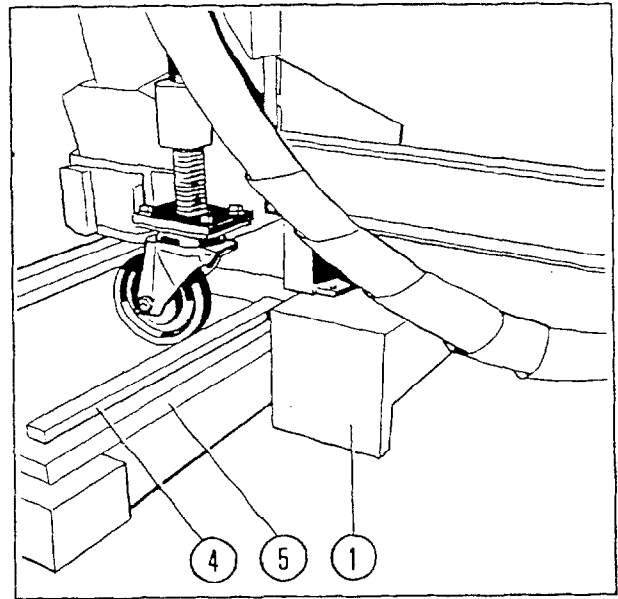


Fig. 6

- ◀ Lower all transport rollers by turning the spindle and slightly lift the unit.
- ◀ Lower the unit with the transport frame from the pallet in the direction of the arrow according to Fig.5 until the rear pair of wheels on the l.l. side comes on to the strip that has been fixed with nails (4/Fig.6).
- ◀ Place the supplied support box (1/Fig.6) under the unit.
- ◀ Using the two rear spindles on the l.l. side (2), lower the unit onto the support box (1) (Fig.6).
- ◀ Remove the pallet (5).
- ◀ Using the two spindles (2), lift the unit again and remove the support box (1) (Fig.6).
- ◀ Using all spindles, lower the unit to approx. 3 cm above floor.
- ◀ Transport the unit to the installation site.

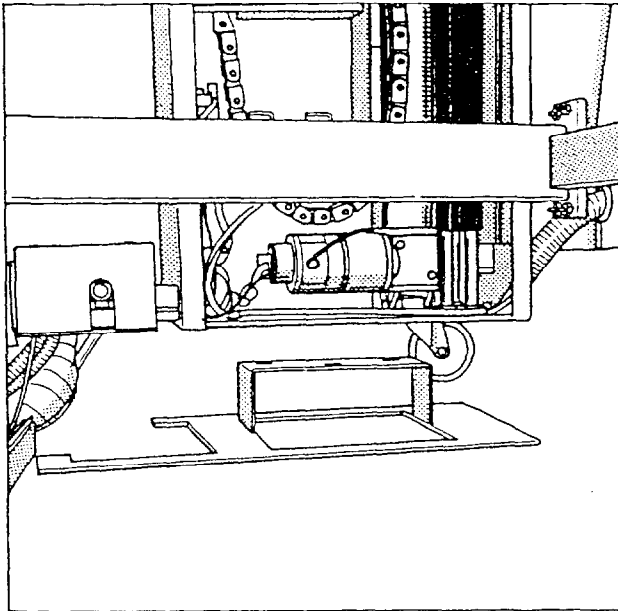


Fig. 7

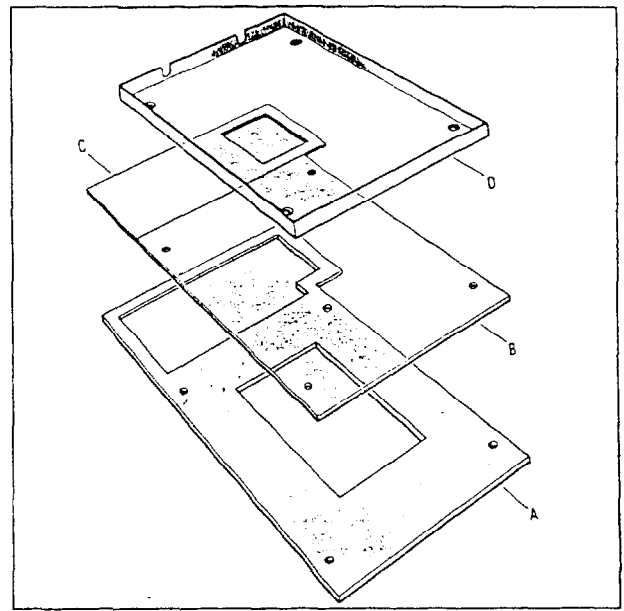


Fig. 8

- ⏪ ⚠ • Remove the transport safety device below the lifting column (Fig.7)!  
Loosen 3 size 10 Allen screws from below.
- ⏪ • Place the two insulating plates (B and C) from the installation set on the dowels or on the bottom plate (A) (Fig.8).
- ⏪ • Lay the floor tray (D/Fig.8) on the larger of the two insulating plates so that the threads of the bottom plate/dowels lie open.
- ⏪ • Move the unit with the transport trolley over the installation site.
- ⏪ • Carefully position the unit over the bottom plate or over the fastening dowels and lower into the floor tray with the transport trolley spindles.

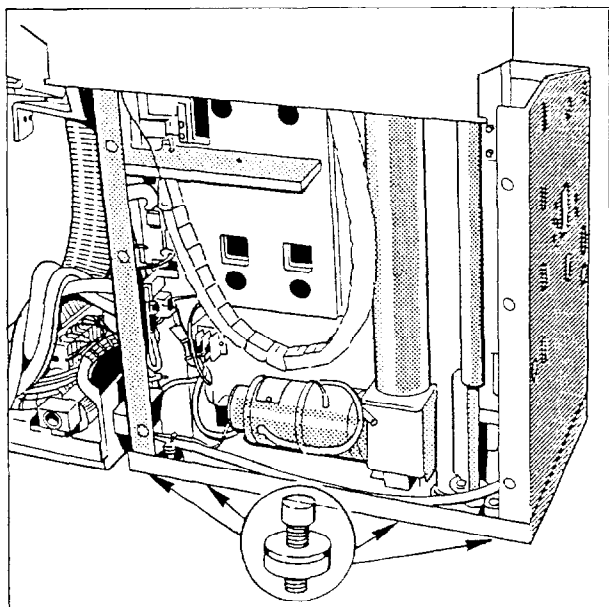


Fig. 9a

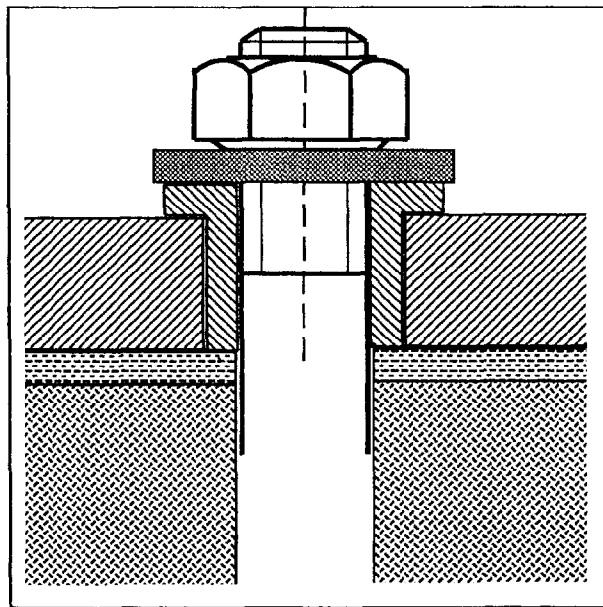


Fig. 9b



- Attach the lifting base of the basic unit to the floor by using the supplied insulating sleeves and washers (Fig.9b) and tighten with a torque of 85 Nm (Fig.9a).

**Attention:** *Ensure insulated installation!*



- Remove the transport trolley.

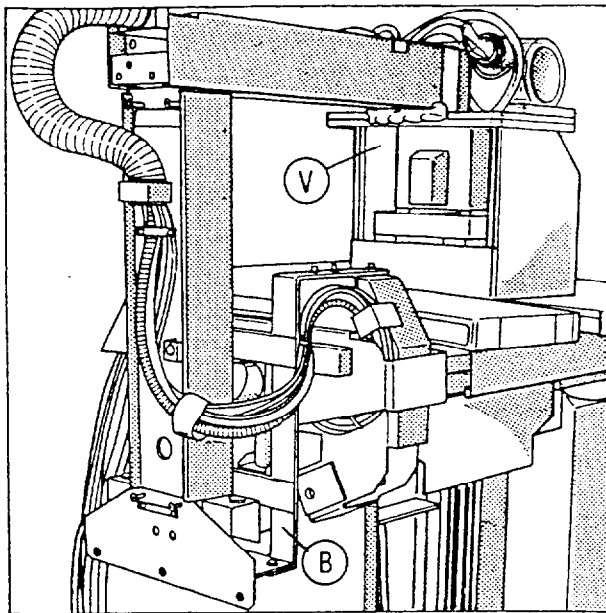


Fig. 10

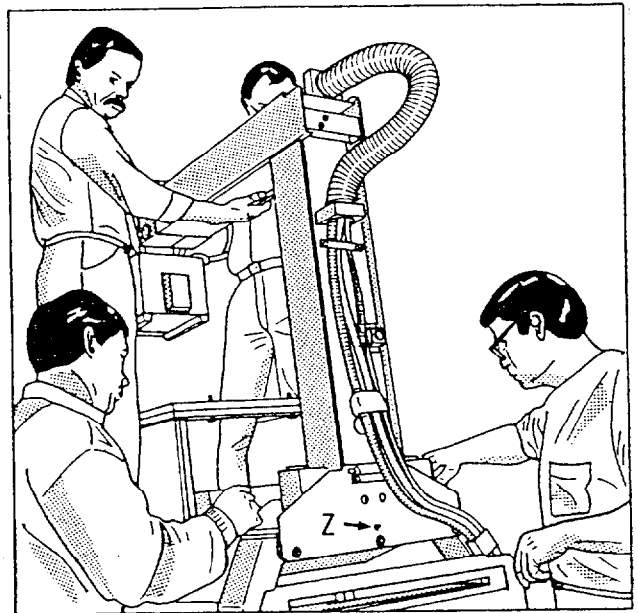


Fig. 11

## Installing the tube assy support arm

**ATTENTION!** For this, you need 4 persons for a short time!

- ◀ Remove the carton with the cables from the tabletop.
- ◀ Remove the transport safety bracket (B/Fig.10) from the tube assembly.
- ◀ Loosen the tube assy support arm from the transport safety device (V/Fig.10).
- ◀ Lift the tube assy support arm, remove the yellow transport safety device and attach the support arm to the basic unit (Fig.11), and let the guide pin (Z/Fig.11) engage in the hole of the tube assy support arm.

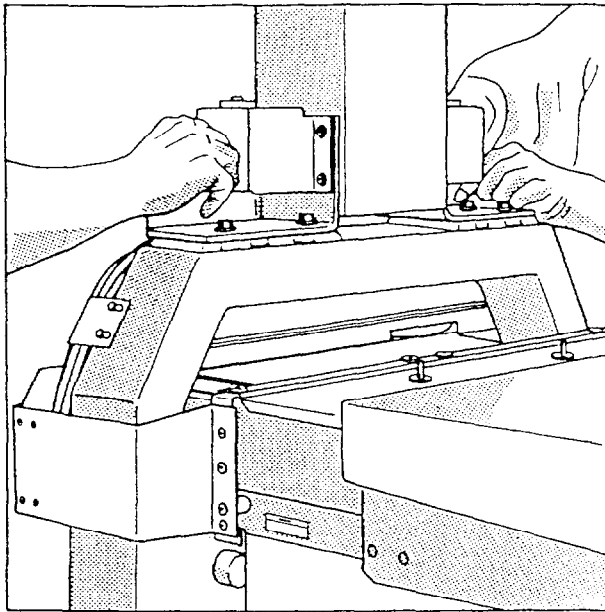


Fig. 12

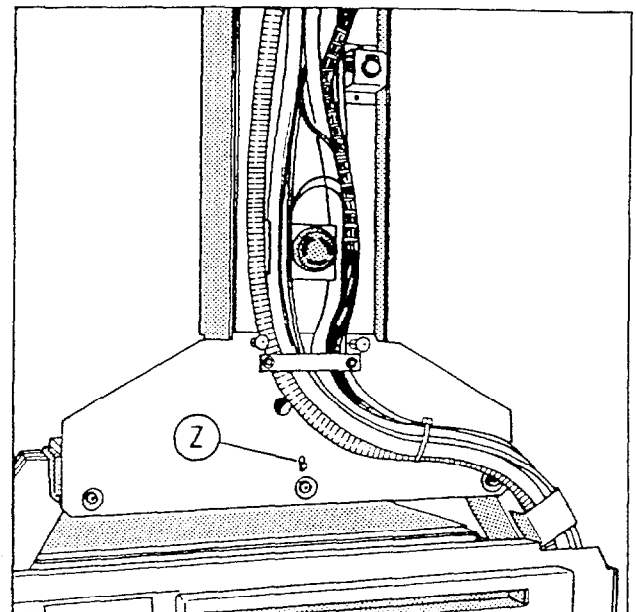


Fig. 13

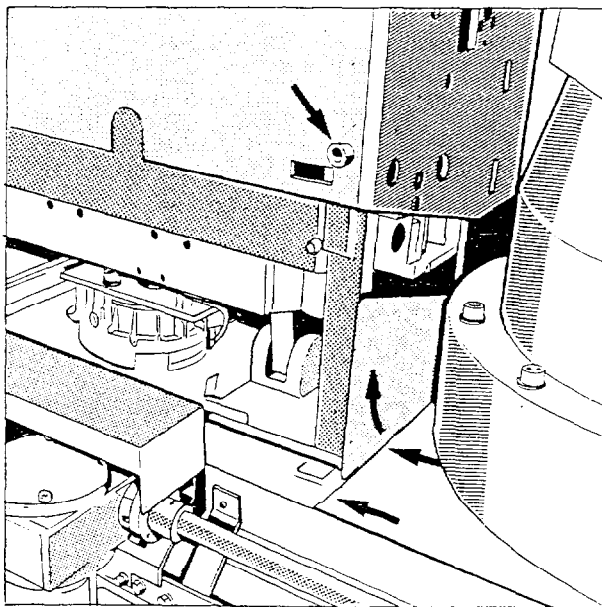


Fig. 14

- ⏪

  - Attach the tube assy support arm with eleven M8 Allen screws, and tighten with a torque of 25 Nm (Fig.12/Fig.13).
- ⏪

  - Remove the red transport safety device (↗/Fig.14) for table height fixation; for better accessibility to the fastening screws, press down the connecting rod in front.

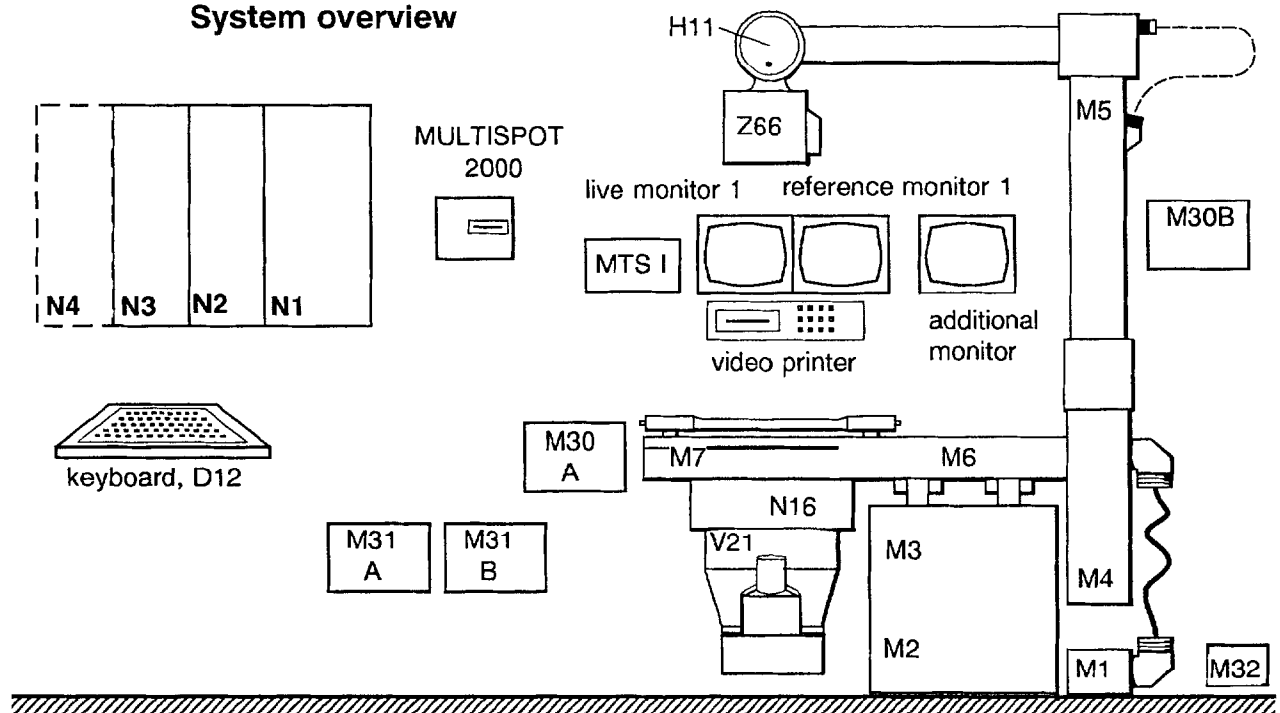
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## Installing the standard cabinets

- ◀◀ • Install the rear cabinet panels and connect with the ground wires.
  - ◀◀ • Remove the transport safety devices marked with red.
  - ◀◀ • Arrange the cabinets according to the installation drawing:
    - N1**, Generator
    - N2**, Unit control
    - N3**, I.I.-TV
    - N4**, Fluorospot (only with UROSKOP D3)
  - ◀◀ • Fasten the top of the cabinets with the supplied retaining brackets to the wall to prevent the cabinets from tilting when the modules are swivelled out.
  - ◀◀ • In addition, attach the cabinets to the floor, if necessary.
  - ◀◀ • Within the area of validity of the DHHS regulations and the IEC 601 (VDE 0750), observe the following:  
*For reasons of fire protection, adapt the supplied aluminum plates to the respective cable outlet according to unit cabling and attach to the bottom plate of the power cabinet.*
- Note:**      *Insert the high-voltage transformer H1 in the power cabinet only after cabling the generator.*
- ◀◀ • Check to see whether all boards are inserted.

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## System overview



### General remarks

- ● Lay out and arrange the cables laterally near the unit.
- ● Draw all cables of the unit together with the I.I. corrugated hose through the opening of the cable connection box and run them to the terminal points in the cabinets N1, N2 and N3 (see tables as from page 3-7).
- ● Lead the necessary cabinet connection cables from below or laterally into the cabinets and run them to the terminal points (table!).
- Connect the cables according to plug designation and table and confirm in the right table column with your initials.

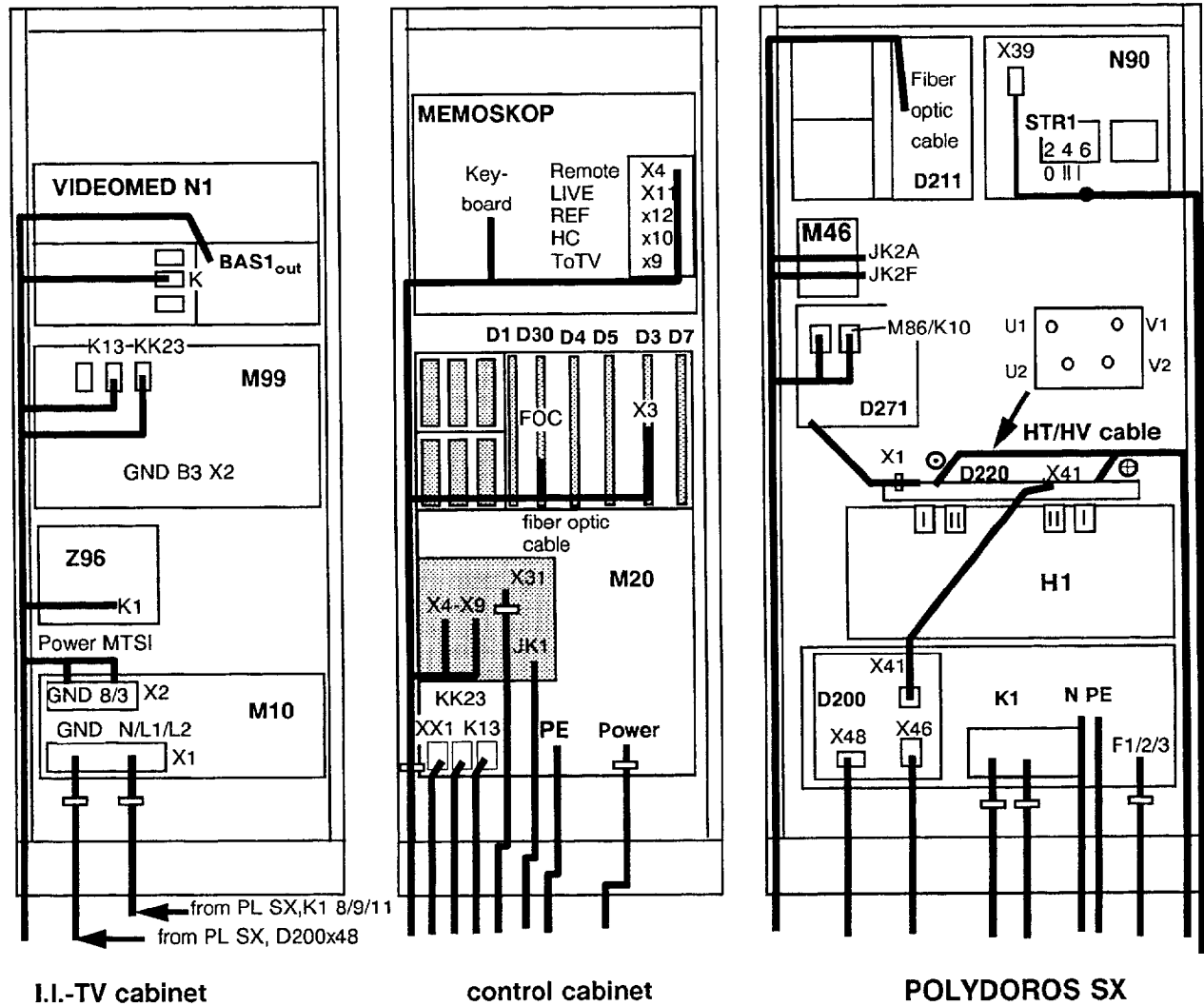
**Important:** Observe safety notes RA0-000.012.29...  
"Handling of fiber optic cables" (Register 2)!

- Secure the plug connections and strain-relieve the cables.

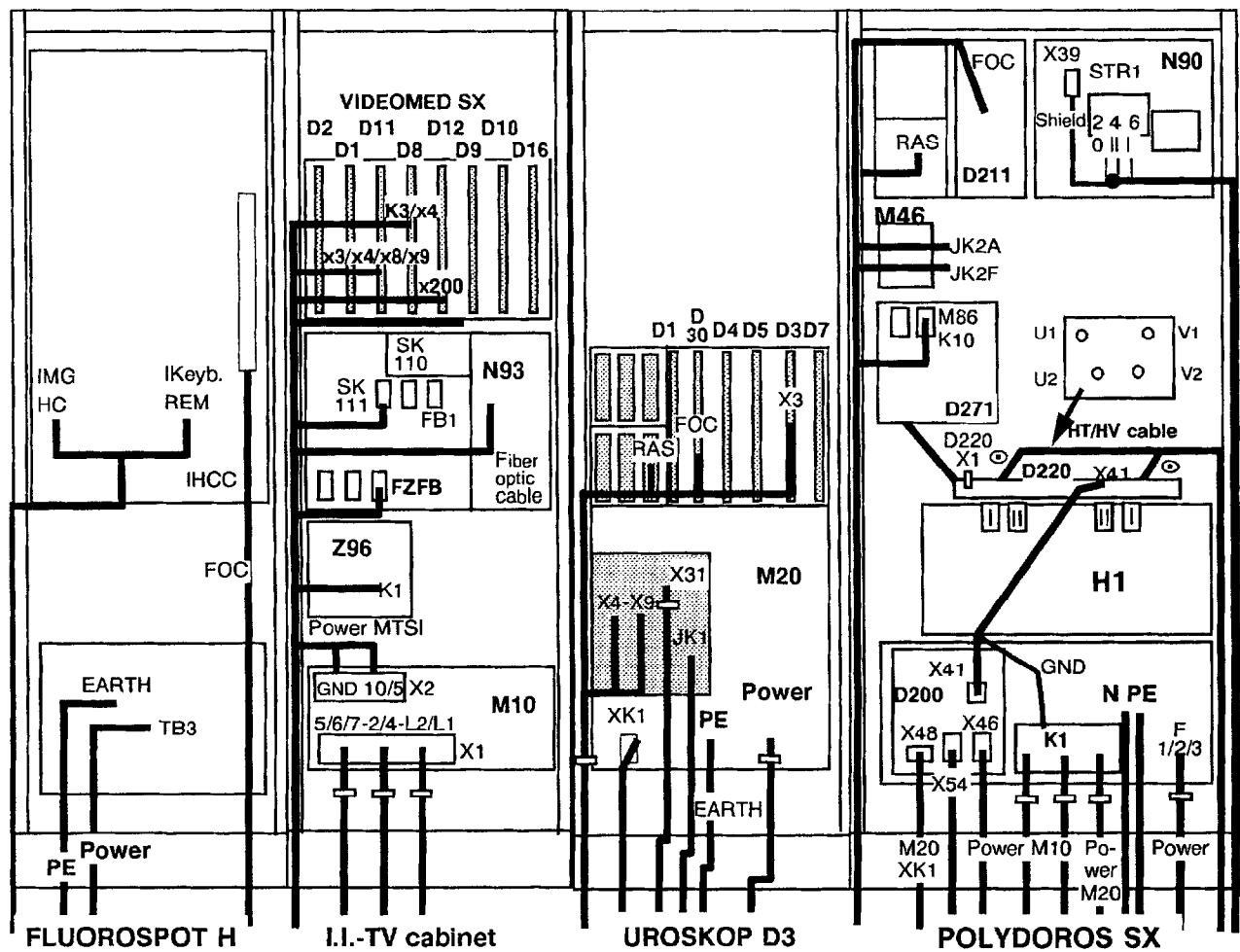
**Important:** The high-voltage cables from the high-voltage transformer H1 to the tube assemblies must not be run upwards inside the power cabinet due to possible interference of the electronics system.

**Note:** *The cable connections are described more precisely in chapter 4, "Cable connections in the power cabinet"!*

## UROSKOP D2, cabling in the cabinets

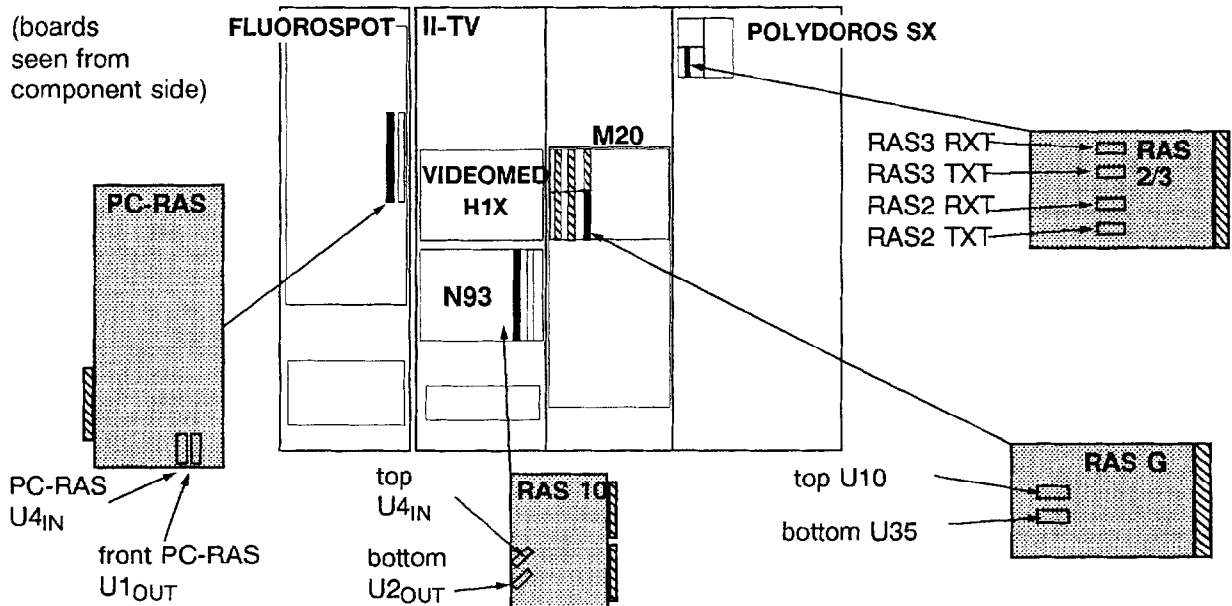


## UROSKOP D3, cabling in the cabinets

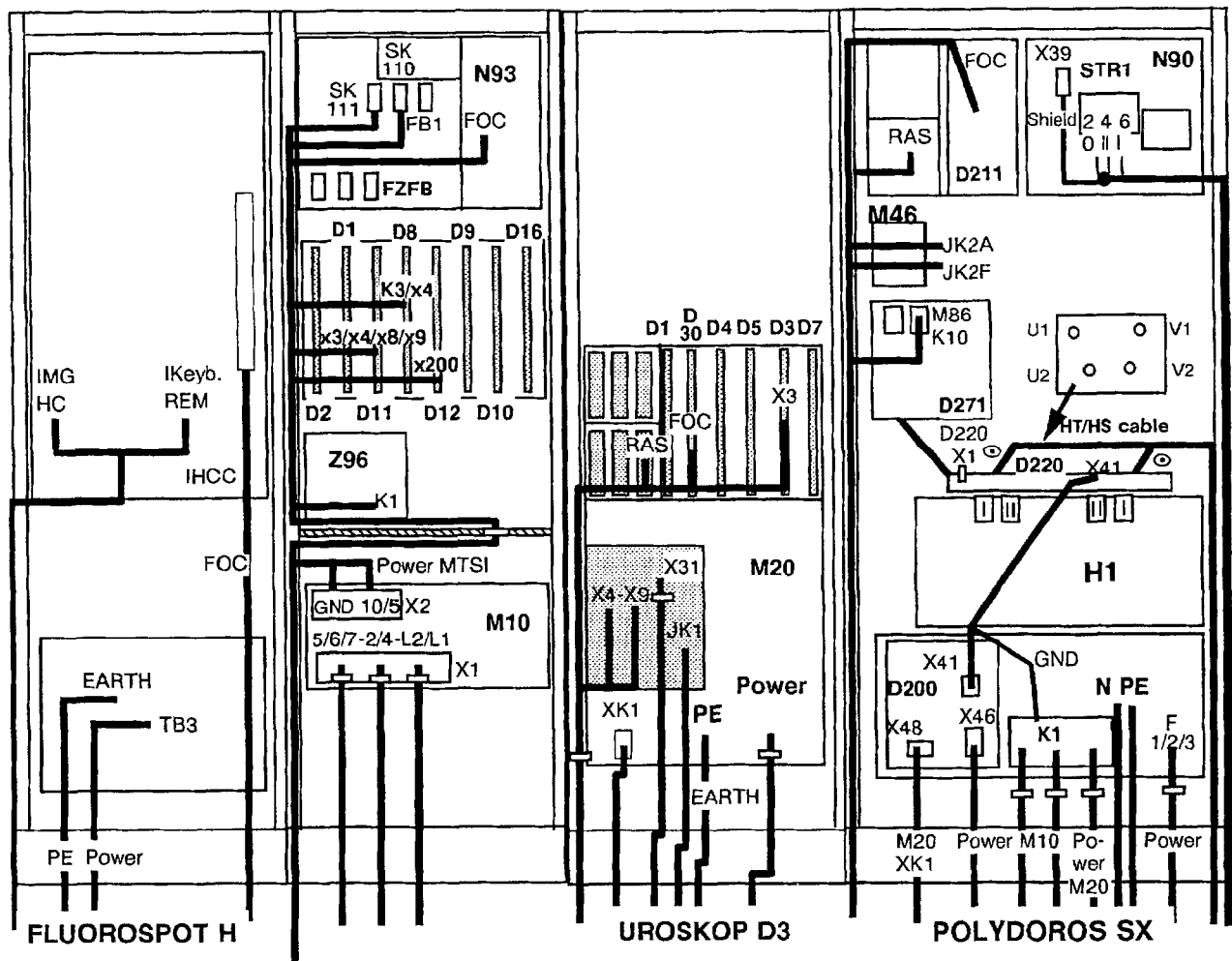


## RAS/fiber optic cable connections

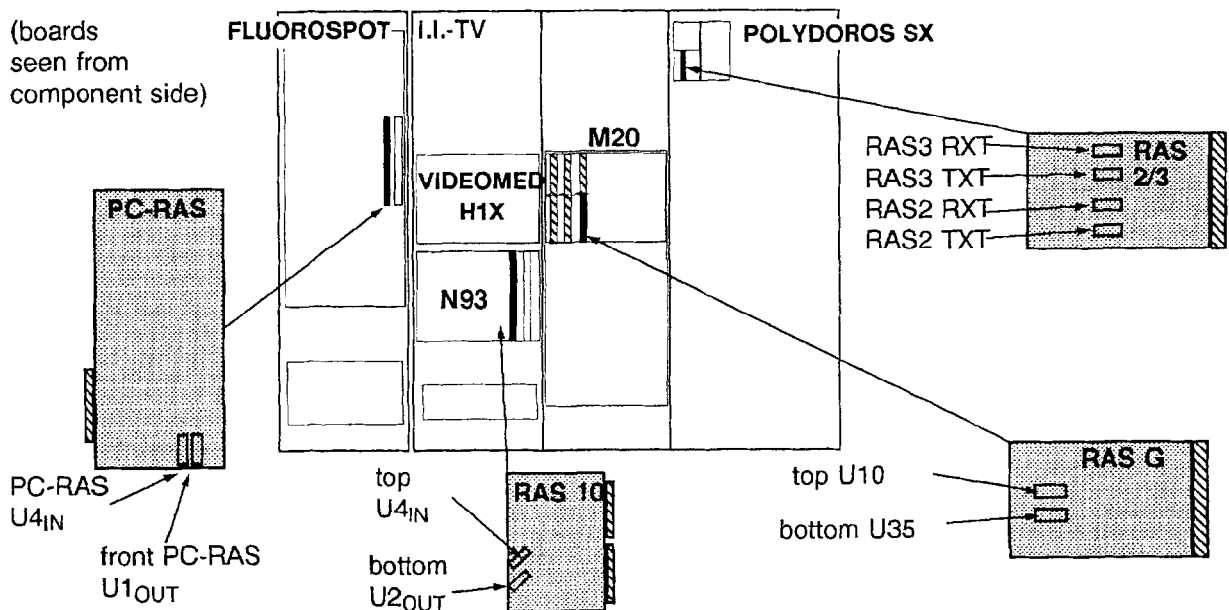
(boards seen from component side)



## UROSKOP D3/EMC version, cabling in the cabinets



## RAS/fiber optic cable connections



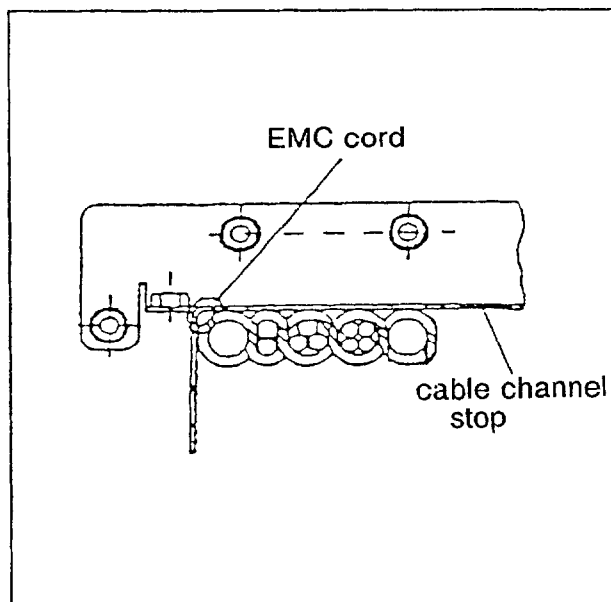


Fig. 1

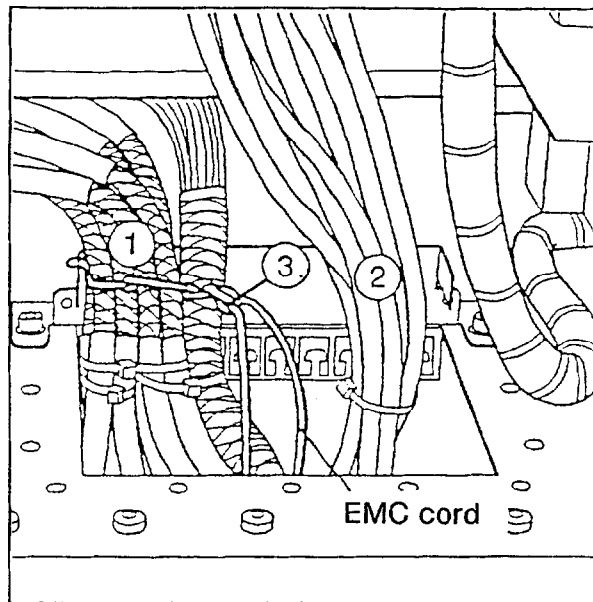


Fig. 2

## I.I.-TV cabinet/EMC version (Uroskop D3 only)

**Attention!** In order to comply with the guidelines on electromagnetic compatibility, it is absolutely necessary that the following measures be observed.

- 1) The I.I. connection N93 is only connected to the protective ground wire via the mains connection.
- 2) The cable Z96/K1 must be run through the EMC cable channel as well, although it is not shielded.
- 3) The Fluorospot H is connected to the grounding plate in the I.I.-TV cabinet, at the bottom, using a 16 green/yellow protective ground wire cable.
- 4) The shieldings of the cables listed below must always be grounded in the EMV cable channel (see Fig.1/2).

Videomed SX/D8/X4	BAS 1 cable (Triax)
Videomed SX/D8/X3	Camera cable
D12/X200	
D11/X3	
D11/X4	
D11/X8	
D11/X9	

Do not ground any shielding at the cable rail of the TV control unit (if necessary, insulate exposed braiding with adequate tape).

Videomed SX power line connection  
special cable SK110 special cable SK111

### Handling of EMC cable channel

- Introduce the EMC cord in the corner of the cable channel stop and knot as two equal ends (Fig.1).

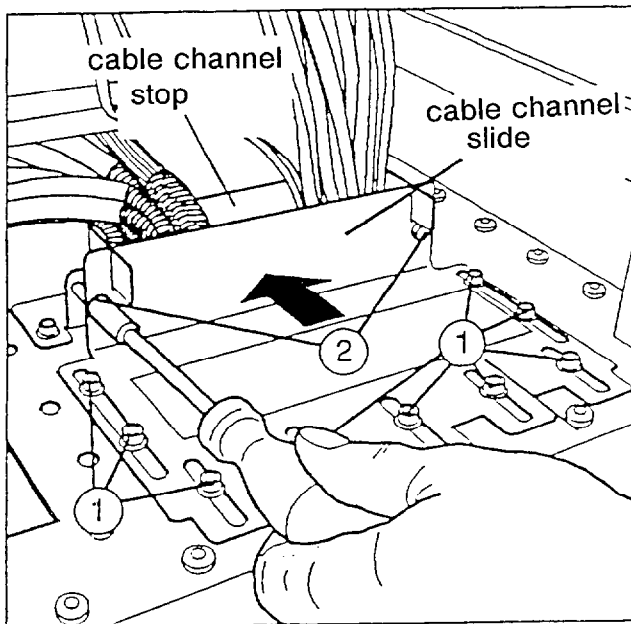


Fig. 3

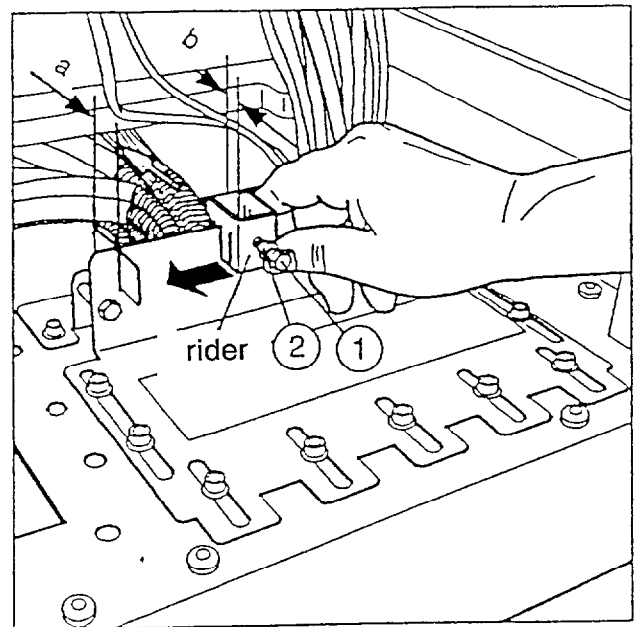


Fig. 4

- Lead the shielded cables - recognizable by the exposed braiding (1/Fig.2) - through the cable channel and arrange the cables or cable bunches (max. 4 cables) according to their diameter (Fig.1)
- Secure the cables with cable ties (Fig.2). Make sure that the cables are pressed together and the exposed braiding projects beyond the upper edge of the cable channel stop.
- Wrap the EMC cord around the cables or cable bunches (Fig.1/2). Compensate the different diameters of cables and cable bunches by tying one or more knots or by wrapping with the EMC cord. Tie a knot in the EMC cord after wrapping the last cable (3/Fig.2) and let the ends hang free without cutting them.
- Run the unshielded cables (e.g. protective ground wires, fiber optic cables, etc.) through the cable channel (2/Fig.2) and secure with cable ties (the fiber optic cables must not get pinched).
- Preinstall the cable channel slide using 9 Allen screws M6x10 (1/Fig.3) and contact washers, and 2 hexagon screws M6x45 (2/Fig.3) (do not tighten screws yet).
- Press the slide with your hand in the direction of the arrow against the cable bunches (Fig.3) and fasten the screws loosely (2/Fig.3).
- Fit the rider so that "b" is approx. 1/3 of "a" (Fig.4).
  - a = distance between cable channel slide and cable channel stop
  - b = distance between rider and cable channel stop
- Press the rider with your hand against the cables/cable bunches, tighten with the screw connection (1/Fig.4) and lock with nut (2/Fig.4).
- Compress the cables with the screws (2/Fig.3) until the EMC cord and the cables are securely pressed together. Avoid any contact of the rider with the cable channel stop.
- Tighten the screws (1/Fig.3).
- If the remaining opening between the rider and the unshielded cable is larger than 4 cm, the opening must be closed with the supplied self-adherent tape.

Type of cable/function	from	to	ok
Connection V21		N1/M46/JK2F	
		N1	
Power cable, shielded, 5x	System contactor	N1/M16/F1, F2, F3	
<b>Zipper hose</b> 24-core	Unit	N2/M20/X7	
24-core	"	N2/M20/X8	
36-core spec.	"	N2/M20/X5	
24-core spec.	"	N2/M20/X9	
24-core spec.	"	N2/M20/X6	
36-core spec.	"	N2/M20/X4	
spec.	"	N2/Z1/D3/X3	
Ground wire, 6mm <sup>2</sup>	"	N2/⊕	
Ground wire, 6mm <sup>2</sup>	"	N2/⊕	
Ground wire, 16mm <sup>2</sup>	Unit H11	N1/M16/PE	
<b>HV cable</b>	Unit H11	N1/H1	
Ground wire 16mm <sup>2</sup>	N1/prot. ground bus	N1/H1/⊕	
Inverter	N1/N11	N1/H1.U1, H1.V1, H1.U2, H1.V2,	
		N1/H1.D220/X1	
Oil pressure switch	N1/D200/X54	Unit H11	
<b>Rotating anode cable</b>	Unit H11	N1/N90/STR1. 2/4/6	
Power cable, shielded 5x2.5mm <sup>2</sup>	from transformer or from M16/K2	N2/M20/X1/N/L1/⊕ and screen	
6mm <sup>2</sup> ground wire	N1/M16/⊕	N2/M20/PE	
Power cable	N1/M16/K3/L1/L2/N	N3/M10/X1/L1/L2/N	
6mm <sup>2</sup> ground wire	N1/M16/⊕	N3/M10/X1/PE	
Power cable	N1/M16/P1	N3/M10/X1/ 5 (bn), 6 (sw), 7 (bl)	
	N3/N93/SK110	N1/N11/D209/X5	
	N3/N93/SK111	N1/FLUOROSPOT/J23	
BAS cable	N3/VIDEOM.SX D8/X4 (BAS1)	N1/FLUOROSPOT/VID <sub>in</sub>	
Power cable 3x4mm <sup>2</sup>	System contactor	N1/FLUOROSPOT /TB3-Line	
Ground wire 16mm <sup>2</sup>	System contactor	N1/FLUOROSPOT /⊕	
Ground wire 16mm <sup>2</sup>	N3/VIDEOMED SX /⊕	N1/FLUOROSPOT /⊕	
Ground wire 16mm <sup>2</sup>	N3/M10 /⊕	N1/FLUOROSPOT /⊕	

UROSKOP D3 - Cable connection table 1

Type of cable/function	from	to	ok
Connection V21		N1/M46/JK2F	
		N1	
Power cable, shielded, 5x	System contactor	N1/M16/F1, F2, F3	
Zipper hose 24-core	Unit	N2/M20/X7	
24-core	"	N2/M20/X8	
36-core spec.	"	N2/M20/X5	
24-core spec.	"	N2/M20/X9	
24-core spec.	"	N2/M20/X6	
36-core spec.	"	N2/M20/X4	
spec.	"	N2/Z1/D3/X3	
Ground wire, 6mm <sup>2</sup>	"	N2/⊕	
Ground wire, 6mm <sup>2</sup>	"	N2/⊕	
Ground wire, 16mm <sup>2</sup>	Unit H11	N1/M16/PE	
HV cable	Unit H11	N1/H1	
Ground wire 16mm <sup>2</sup>	N1/prot. ground bus	N1/H1/⊕	
Inverter	N1/N11	N1/H1.U1, H1.V1, H1.U2, H1.V2,	
		N1/H1.D220/X1	
Oil pressure switch	N1/D200/X54	Unit H11	
Rotating anode cable	Unit H11	N1/N90/STR1. 2/4/6	
Power cable, shielded 5x2.5mm <sup>2</sup>	from transformer or from M16/K2	N2/M20/X1/N/L1/⊕ and screen	
6mm <sup>2</sup> ground wire	N1/M16/⊕	N2/M20/PE	
Power cable	N1/M16/K3/L1/L2/N	N3/M10/X1/L1/L2/N	
6mm <sup>2</sup> ground wire	N1/M16/⊕	N3/M10/X1/PE	
Power cable	N1/M16/P1	N3/M10/X1/ 5 (bn), 6 (sw), 7 (bl)	
	N3/N93/SK110	N1/N11/D209/X5	
	N3/N93/SK111	N1/FLUOROSPOT/J23	
BAS cable	N3/VIDEOM.SX D8/X4 (BAS1)	N1/FLUOROSPOT/VID <sub>in</sub>	
Power cable 3x4mm <sup>2</sup>	System contactor	FLUOROSPOT /TB3-Line	
Ground wire 16mm <sup>2</sup>	N3/⊕	FLUOROSPOT /⊕	
Ground wire 6mm <sup>2</sup>	N3/M10 /⊕	N1/⊕	

UROSOP D3/EMC version - Cable connection table 1

Type of cable/function	from	to	ok
IONTOMAT for spotfilm dev.	N1/M46/JK2A	N2/M20/JK1	
I.I. corrugated hose	Unit	N3/VIDEOMED SX D8/X3	
"	"	N3/ " D11/X3 (H)	
"	"	N3/ " D11/X4 (V)	
"	"	N3/ " D11/X8 (DF)	
"	"	N3/ " D11/X9 (A)	
"	"	N3/ " D12/X200	
"	"	N3/Z96/K1	
" Ground wire, 6mm <sup>2</sup>	"	N2/ ⊕	
BAS lead → Live Monitor 1	FLUOROSPOT VID <sub>out</sub>	MTS I X11	
IR-remote ctrl. signal lead	" Remote/ J24	MTS I FB	
BAS lead → Ref. Monitor 1	" Rev <sub>out</sub>	MTS I X12	
Control lead	" HCC CTL/J29	Hardcopy	
Video signal lead	" HCC Image/J26	Hardcopy	
Keyboard extension	" Keyboard/J23	Keyboard, fem. connector	
Ground wire 6mm <sup>2</sup>	N3/M10 / ⊕	MTS I / ⊕	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/1/6	MTS I X1/2/3	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/7/8	additional monitors	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/9	Video printer	
Control console cable	N2/M20/X31	Control console M31A	
Control console cable	N2/M20/X32	Control console M31B	
FOC RAS	N1/N11/RAS3/RXD	N4/FLUORO/PC-RAS/U1	
" "	N1/N11/RAS3/TXD	N4/FLUORO/PC-RAS/U4	
" "	N1/N11/RAS2/RXD	N3/N93/RAS10/U2	
" "	N1/N93/RAS10/U4	N2/M20/RASG/U10	
" "	N1/N11/RAS2/TXD	N2/M20/RASG/U35	
" POLYDOROS	N1/N11	N2/M20/D30/41/42	
Footswitch	Footswitch M32	Unit M1/X1	
Remote control	Remote control M30A	Unit M7	
Remote control	Remote control M30B	Unit M5	

UROSKOP D3 - Cable connection table 2

Type of cable/function	from	to	ok
IONTOMAT for spotfilm dev.	N1/M46/JK2A	N2/M20/JK1	
I.I. corrugated hose	Unit	N3/VIDEOMED SX D8/X3	
"	"	N3/ " D11/X3 (H)	
"	"	N3/ " D11/X4 (V)	
"	"	N3/ " D11/X8 (DF)	
"	"	N3/ " D11/X9 (A)	
"	"	N3/ " D12/X200	
"	"	N3/Z96/K1	
" Ground wire, 6mm <sup>2</sup>	"	N3/ ⊕	
BAS lead → Live Monitor 1	FLUOROSPOT VID <sub>out</sub>	MTS I X11	
IR-remote ctrl. signal lead	" Remote/ J24	MTS I FB	
BAS lead → Ref. Monitor 1	" Rev <sub>out</sub>	MTS I X12	
Control lead	" HCC CTL/J29	Hardcopy	
Video signal lead	" HCC Image/J26	Hardcopy	
Keyboard extension	" Keyboard/J23	Keyboard, fem. connector	
Ground wire 6mm <sup>2</sup>	N3/M10 / ⊕	MTS I / ⊕	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/1/6	MTS I X1/2/3	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/7/8	additional monitors	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/9	Video printer	
Control console cable	N2/M20/X31	Control console M31A	
Control console cable	N2/M20/X32	Control console M31B	
FOC RAS	N1/N11/RAS3/RXD	N4/FLUORO/PC-RAS/U1	
" "	N1/N11/RAS3/TXD	N4/FLUORO/PC-RAS/U4	
" "	N1/N11/RAS2/RXD	N3/N93/RAS10/U2	
" "	N1/N93/RAS10/U4	N2/M20/RASG/U10	
" "	N1/N11/RAS2/TXD	N2/M20/RASG/U35	
" POLYDOROS	N1/N11	N2/M20/D30/41/42	
Footswitch	Footswitch M32	Unit M1/X1	
Remote control	Remote control M30A	Unit M7	
Remote control	Remote control M30B	Unit M5	

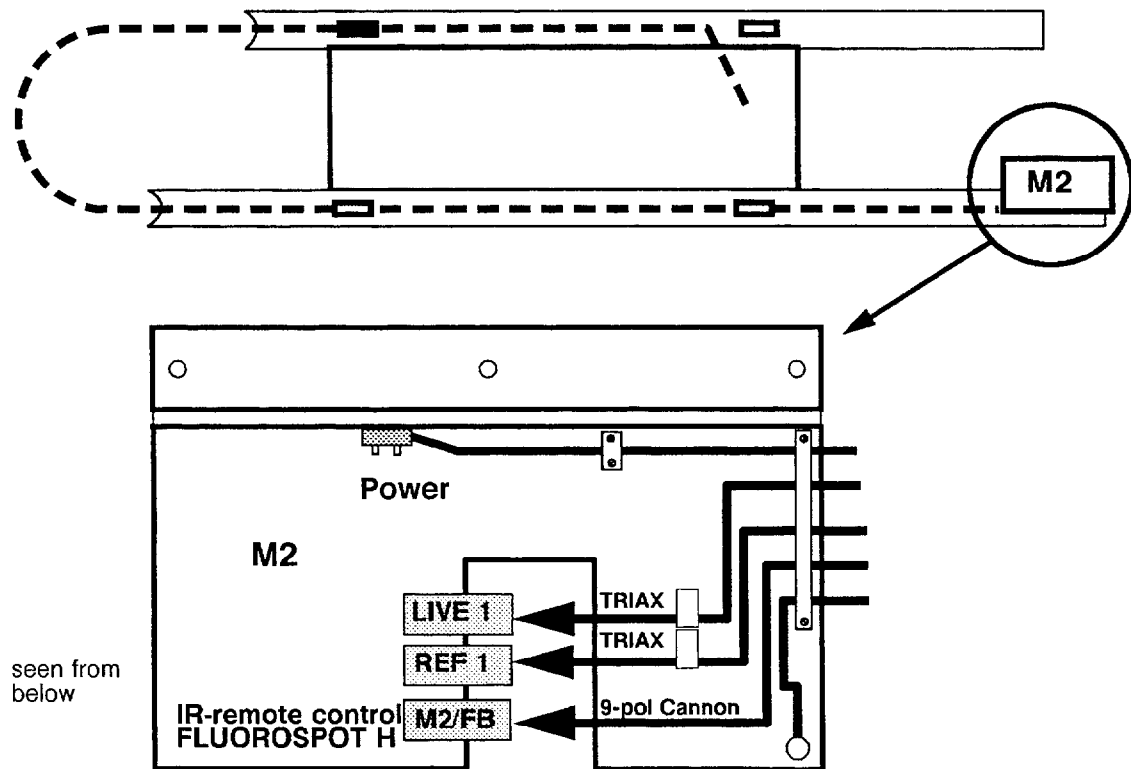
UROSOP D3/EMC version - Cable connection table 2

Type of cable/function	from	to	ok
SMD		N1/M46/JK2F	
Power cable, shielded 5x	System contactor	N1/M16/F1/F2/F3	
Zipper hose 24-core	Unit	N2/M20/X7	
24-core	"	N2/M20/X8	
36-core spec.	"	N2/M20/X5	
24-core spec.	"	N2/M20/X9	
24-core spec.	"	N2/M20/X6	
36-core spec.	"	N2/M20/X4	
spec.	"	N2/Z1/D3/X3	
Ground wire, 6mm <sup>2</sup>	"	N2/⊕	
Ground wire, 6mm <sup>2</sup>	"	N2/⊕	
Ground wire, 16mm <sup>2</sup>	Unit H11	N1/M16/⊕	
HV cable	Unit H11	N1/H1	
Ground wire 16mm <sup>2</sup>	N1/prot. ground bus	N1/H1/⊕	
Inverter	N1//N11	N1/H1.U1, H1.V1, H1.U2, H1.V2,	
Rotating anode cable	Unit H11	N1/N90/STR1.2/4/6	
Power cable, shielded 3x6mm <sup>2</sup>	from transformer or from M16/K1	N2/M20/X1/N/L1/⊕ and screen	
Ground wire 6mm <sup>2</sup>	N1/M16/⊕	N2/M20/⊕	
Power cable	N1/M16/K3/L1/L2/N	N3/M10/X1/L1/L2/N	
Ground wire 6mm <sup>2</sup>	N1/M16/⊕	N3/M10/X1/⊕	
Power cable	N1/M16/P1	N3/M10/X1/ 5 (bn), 6 (b), 7 (bl)	

UROSKOP D2 - Cable connection table 1

Type of cable/function	from	to	ok
IONTOMAT for spotfilm dev.	N1/M46/JK2A	N2/M20/JK2	
I.I. corrugated hose	Unit	N3/FZ/K	
"	"	N3/Z96/K1	
" 6mm <sup>2</sup> , ground wire	"	N2/⊕	
BAS lead → Live Monitor 1	MEMOSKOP 100 Live/X11	MTS I X11	
BAS lead → Ref. Monitor 1	MEMOSKOP 100 Rev/X12	MTS I X12	
Control lead	MEMOSKOP 100 X4	MULTISPOT REM <sub>EXP</sub>	
BAS-signal lead	MEMOSKOP 100 X10	MULTISPOT Video <sub>IN</sub>	
Keyboard extension	MEMOSKOP 100 D11.X2	Keyboard female connector side	
Ground wire 6mm <sup>2</sup>	N3/M10 / ⊕	MTS I / ⊕	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/1/6	MTS I / X1/2/3	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/7	additional monitor	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/9	Video printer	
Power cable 3x1.5mm <sup>2</sup>	N3/M10/X2/8	MULTISPOT 2000	
Control console cable	N2/M20/X31	Control console M31A	
Control console cable	N2/M20/X32	Control console M31B	
FOC	Generator cabinet N1	Cabinets N2, N3	
POLYDOROS	N11/D211	N2/M20/D30/41/42	
Footswitch	Footswitch M32	Unit M1/X1	
Remote control	Remote control M30A	Unit M7	
Remote control	Remote control M30B	Unit M5	

UROSKOP D2 - Cable connection table 2



Connection of monitor support system (MTSI) to interface M2

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## Power connection of generator

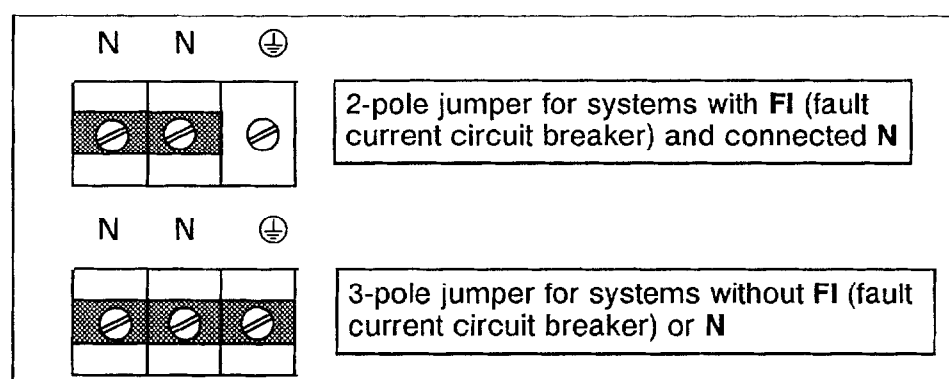
**Caution:** The power supply line must be de-energized.

Nominal line voltage	Line voltage control range	Maximum line current PL. SX 50	Maximum line current PL. SX 80
400 V	360 V ... 440 V	165 A rms	230 A rms
440 V	396 V ... 484 V	145 A rms	210 A rms
480 V	432 V ... 528 V	130 A rms	200 A rms

**Note:** With a line voltage of 440/480 V, the line-matching transformer (option) must be installed on the rear panel of the power cabinet and connected according to wiring diagram X2075-11. See also 4-6.

- Run the power cable coming from the main distributor to power connection M16.
- Strain-relieve the power cable.

**Attention!** Check the jumper on the terminals in M16. If necessary, replug. Place the jumper that is not inserted in the accessory service pack.



- Connect power lines L1, L2, L3, N, PE to fuses F1, F2, F3 and terminal strip N, ⊕ ; make sure that the phase connection is correct.
- For connection to F1, F2 and F3, the supplied cable lugs, with screw connection, can be used. These must be clamped before connecting the supply cables and insulated with shrinkdown plastic tubing.

### Power connection of components

- Run the power cables of the basic unit to be connected or modules in the M16 to the terminal strips K1, and connect.
  - K1.15.16.17 (L31, L32, L33): Voltage connected via GS contactor with generator **ON**.
  - K1.9...14 (L21, L22, L23): Voltage already connected with system contactor **ON**, e.g. for TV power distributor. G5372 (with own power contactor)
  - K1.6,7,8      N
  - K1.3,4,5      ⊕
- Strain-relieve the power cables.

### Connection of TV power distributor M10 (G5372)

Run the cables mentioned in the following from M16 to M10, if not already present in the system cabling, and connect.

M16.	K1.9.10 (L21)	——	M10.	X1.L1	power supply
	K1.11.12 (L22)	——		X1.L2	3x 2,5□
D200.	X46.1	——	M10.	X1.6	control cables
	X46.2	——		X1.5	4x 0,75□
	X46.3	——		X1.7	
M16.	K1.3.4.5 ⊕	——	M10.	X1. ⊕	6□

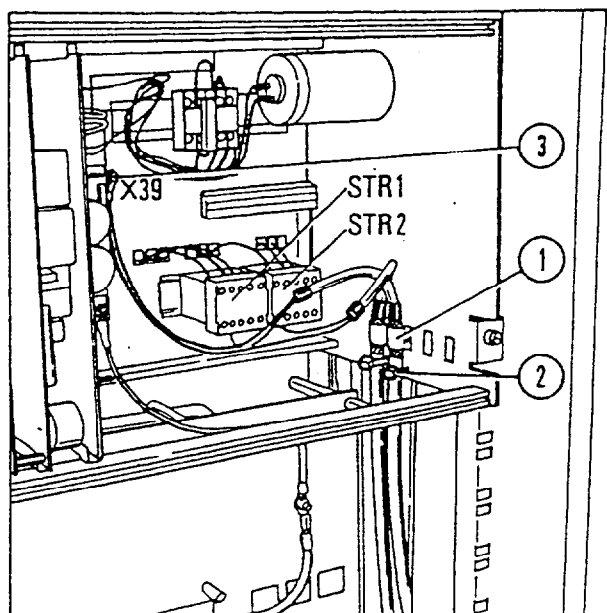


Fig 1

### Connection of double-shielded rotating anode cables

#### Generator side

- Lead the rotating anode cables (length required internally approx. 2.5 cm) on the **right-hand** side into the power cabinet, run the cables up to the N90 and connect them as shown in Fig.1.

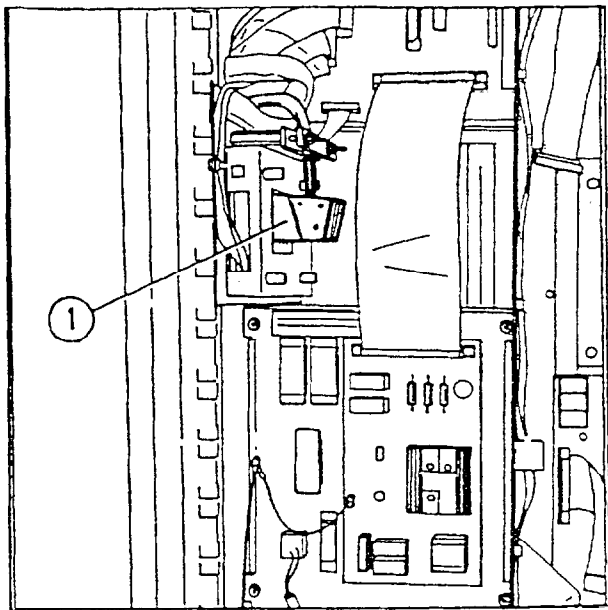


Fig. 2

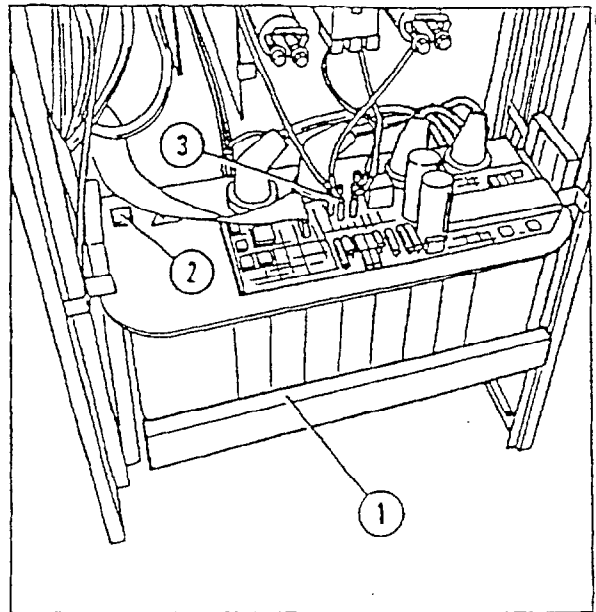


Fig. 3

## Connection of IONTOMAT detector

- On M46, connect the IONTOMAT detector connector A (1/Fig.2).
- Connect the SDM cable to the M46 IK2F.

## Connection of high-voltage transformer H1

### Inserting the H1 into the power cabinet

- Prior to inserting the H1, the high-voltage cables must be laid according to their designations and run on the **right-hand** side of the power cabinet behind the H1 all the way up under the inverter.
- Move the pallet with the high-voltage transformer H1 in front of the cabinet.
- Move out holder for the H1 (1/Fig.3).
- Insert H1 in the holder.

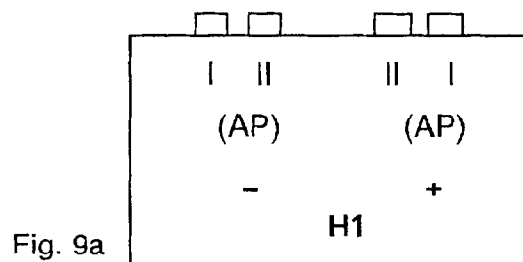


Fig. 9a

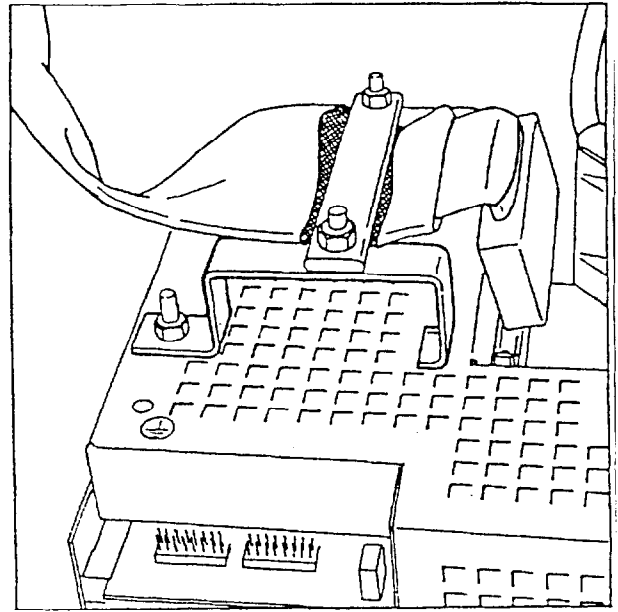





Fig. 4

### Connection of primary leads

- Remove the contact safety device (with  symbol) from D220.
- Connect the ground wire cable coming from the protective ground bus to H1.  (2/Fig.3).
- Attach the leads from the inverter modules according to their designation (3/Fig.3):  
H1.U1, H1.V1, H1.U2, H1.V2
- Run the cable connected to D220.X41 behind H1 down to PC board D200 and insert it in X41. Connect the yellow-green cable to M16.K1.3...5.
- Plug the flat ribbon cable X1 from D209 into X1 on D220 and strain-relieve it on the cover (Fig.4).

### Connection of high-voltage cables

- Check the oil level (approx. 1 cm) in the HV receptacles at the HV generator; if necessary, fill up with oil from H1.
- Insert the high-voltage plugs with angular sleeves and silicone sealing (generator side **without** silicone washer) in H1, according to their designation.
- Insert the HV generator H1 back into the power cabinet.
- Reattach the contact safety device (with  symbol).

## Controls and indicator lamps for radiation protection

At the request of the customer, or if laid down in country-specific regulations (e.g. DHHS), the following controls and indicators can be connected in the power cabinet:

- **Connection of the door contact for radiation disable function**

Connect the door contact for **AP1** to: D200.X54.6 and D200.X54.3

- **Connection of the indicator lamps for tube assy selection**

Install an indicator lamp (24 V ~, max. 5 W) in the vicinity of the tube assembly and ensure that you can see it well from the control console.

Connect the lamps to:

D200.X47.2 24 V ~ and X47.1 (0 V<sub>L</sub>) for **AP1**

- **Connection of the indicator lamps for radiation ON**  
(e.g. in front of the examination room door)

If an external radiation indicator for fluoroscopy and exposure is desired, the tube assembly-dependent indicator lamps (24 V ~, max. 5 W) must be connected to PC board D200 as follows:

D200.X47.8 24 V ~ and X47.7 (0 V<sub>L</sub>) for **AP1**

- **Acoustic signal (fluoroscopic timer) 4.5 min. or 9.5 min.**

The actuation of an external signal generator (24 V DC, e.g. signal generator, Part No. 32 34 368 - can be programmed for interval or continuous tone) can be connected to

D200.X47.9 and D200.X47.12 (X2075-12-16B) via a zero-potential contact.

Connection of oil pressure switch			
generator D200	Line/ Core		tube assembly
X54.4	○	○ 1	oil pressure switch
X54.5	○	○ 2	anode side

## Data printer (option)

An Epson-compatible printer can be connected to board D210.X11 (HOST) using the RS 232 connection cable (serial interface); the ESD regulations must be observed!

The corresponding programming is performed in the main menu "Configuration" of the generator service software under "Connected Components" and "Printer" .

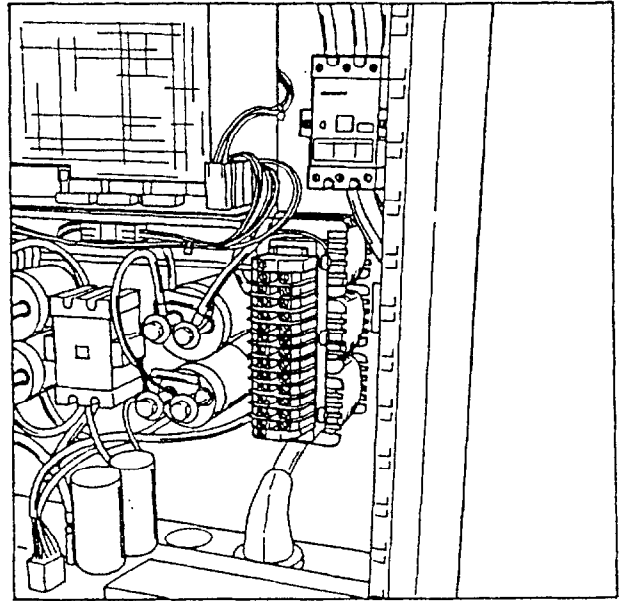


Fig. 5

#### Line-matching transformer (option)

- The line-matching transformer is already installed according to BZ at the factory.
- Subsequent installation must be performed as shown in Fig.5. Connect according to wiring diagram X2075-11.
- Adapting the T1:  
Replug the connection in accordance with the provided line voltage at T1 (behind PC board D200) according to wiring diagram X2075-2. Frequency-dependent adaptation is performed by programming in module J04: "LINE PARAMETER".

#### Connection of protective ground wires

- Connect the protective ground wires of the components (units and options) to the M16 protective ground bus.
- Connect the tube assembly ground wires here as well. Further connection points are provided on the protective ground bus on the **left** inside the cabinet.

**Important:** To prevent interference by ground loops, run the ground wires in a star pattern to the central ground wire connection point!

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**Temperature indicators**

- Read off the temperature indicator on the VIDEOMED SX camera hood.
- Record the measured temperature in the IQ certificate RXD0-000.037.. (see Logbook, register 9).
- If the temperature indicator shows no discoloration, enter " <37° C".
- If there are discolorations, proceed according to IQ documentation RXD0-000.904.01.. "Temperature indicator, VIDEOMED SX (see instructions RLL5-310.064.06.. , Reg. 1).
- Read the 37°C temperature indicator on the I.I. housing, near the nameplates.
- Record the temperature reading in the IQ certificate under para. 2.
- If the inner square field of the indicator is white, the temperature has not been exceeded (basic color of indicator field is white = temperature not exceeded).  
Enter " <37° C" in the IQ certificate RXD0-000.037.. .
- If a discoloration of the 37°C temperature indicator is present (= inner black field), then proceed as indicated in the IQ documentation RXD0-000.038.01...
- Remove the temperature indicators after system startup.

**Information regarding the following work steps**

You may perform some of the operations described below only after startup of the UROSKOP D, as the unit must be moved into various positions for attaching the cover panels.

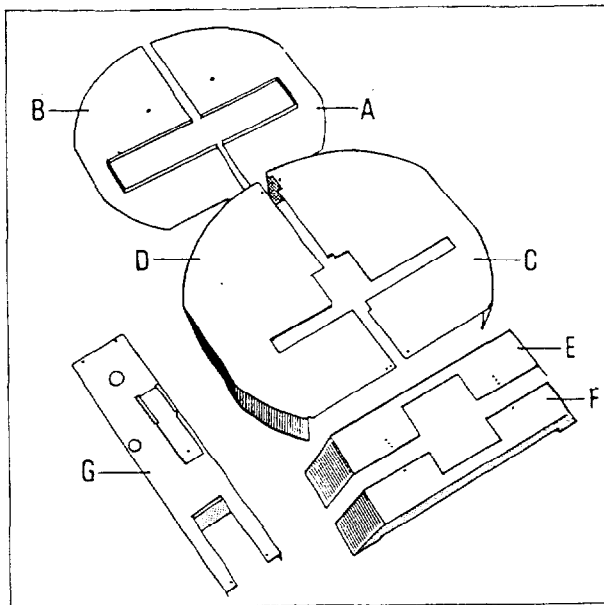


Fig. 2

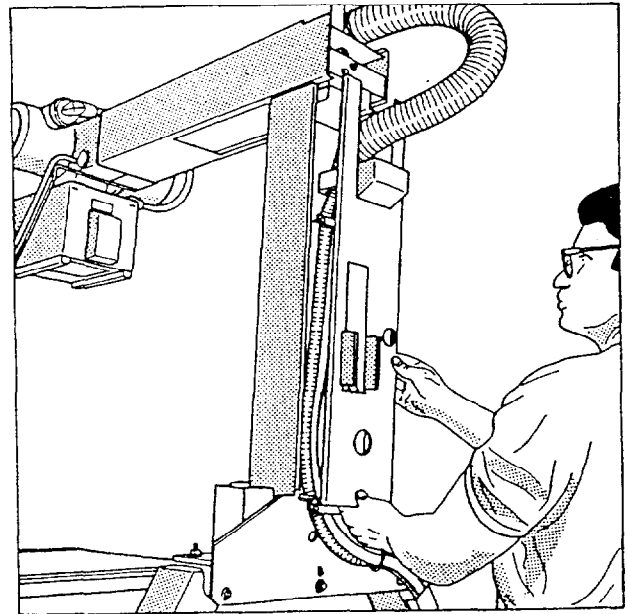


Fig. 3

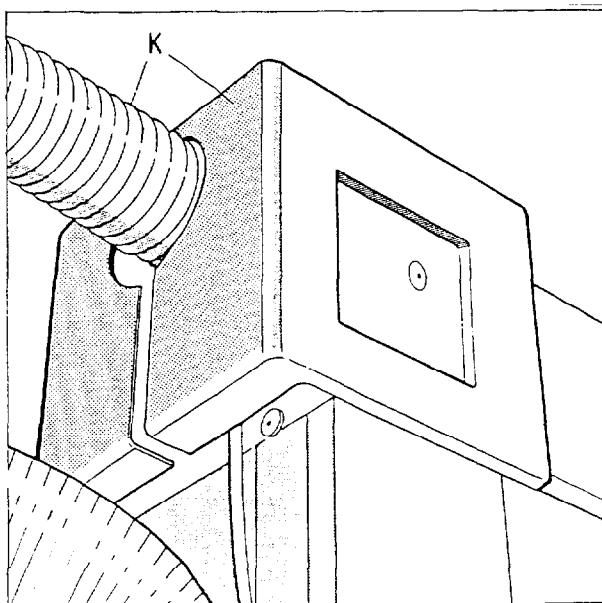


Fig. 4

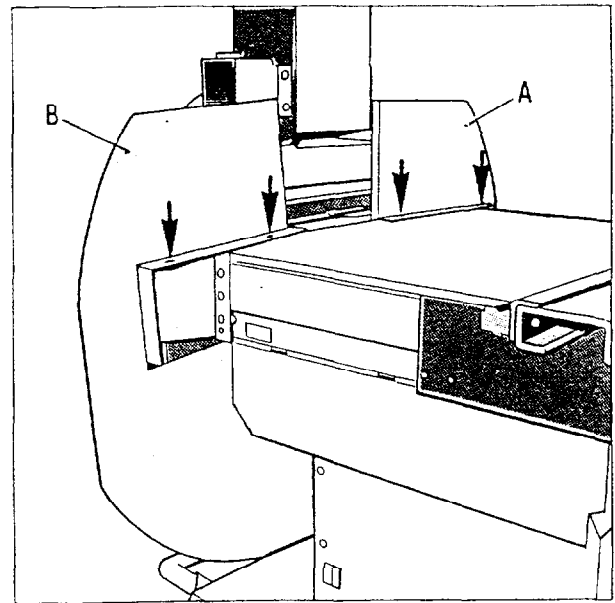


Fig. 5

### Attaching the swivel frame panelling

- Set the cover panels of both the swivel frame A to F and tube assy support arm G to H aside (Fig.2) and unscrew the inserted screws, if necessary.
- Connect the ground wire to cover panel G of the tube assy support arm.
- Attach the rear cover panel G of the tube assy support arm (Fig.2/3).
- Install the two halves of cover K on the tube assy support arm (Fig.4).
- Attach the cover panels A and B to the front of the swivel frame and fasten with two cover screws each at the top (✓/Fig.5) .

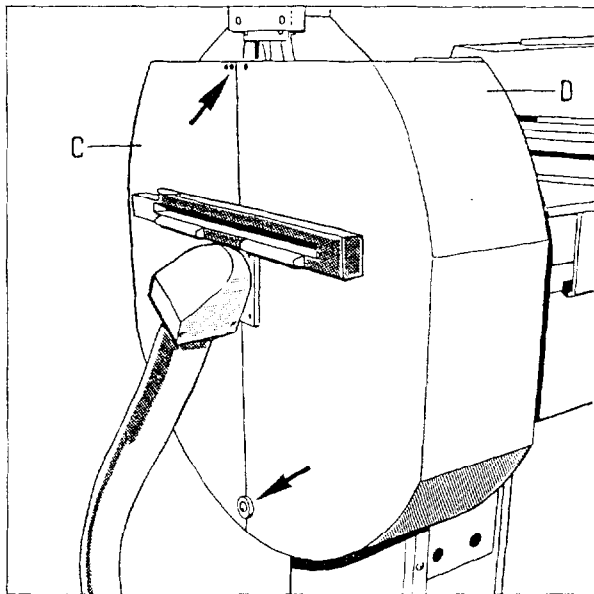


Fig. 6

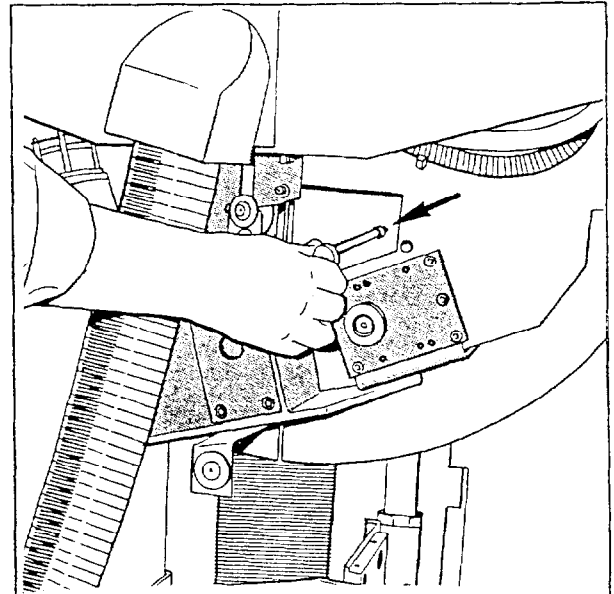


Fig. 7

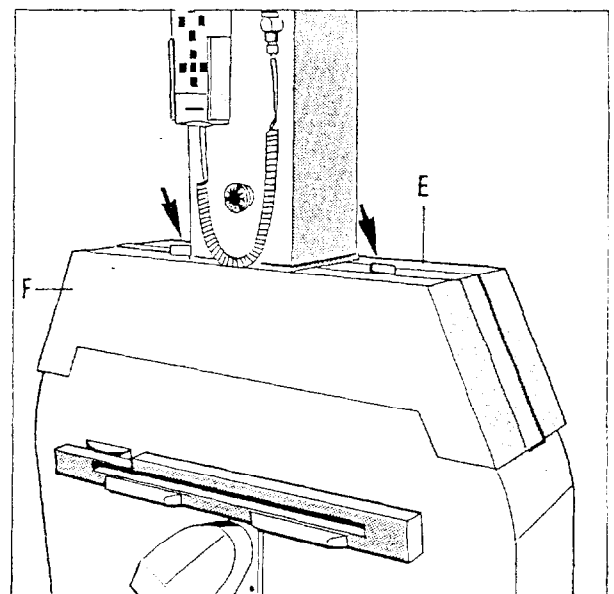


Fig. 8

- Attach cover panels A and B from the rear with the previously loosened Allen screws (↘/Fig.7)
- Insert the two cover panels C and D (Fig.2) in the swivel frame on the rear, screw them together with the enclosed bracket, above (↗/Fig.7) and fasten with the round plastic connector, below (↙/Fig.7).

**Note:** Do not place the cover panels C and D over the cover panels A and B. The cover panels A and B must be on the outside.

- Attach the covers E and F (Fig.2/8) to the top of the swivel frame and fasten with the enclosed plastic connectors (↘/Fig.8).

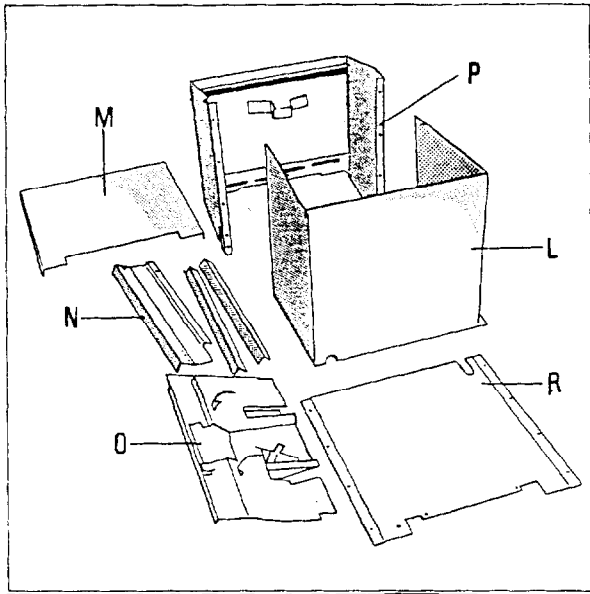


Fig. 9

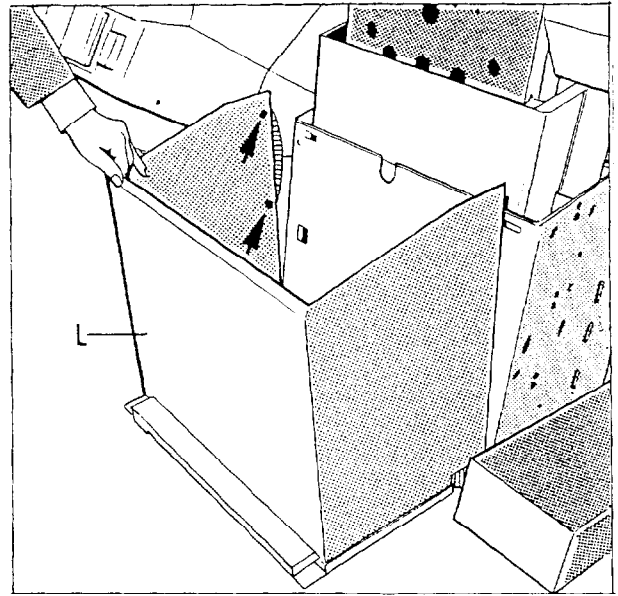


Fig. 10

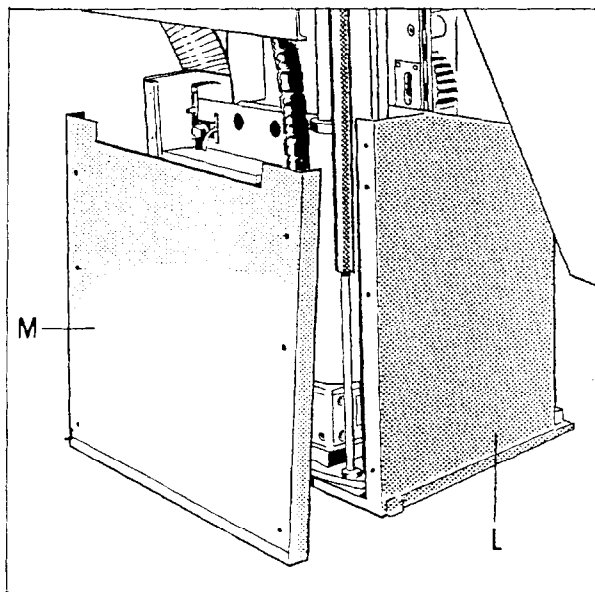


Fig. 11

### Attaching the lifting column panelling

- Switch on the system and move the unit upwards.
- Set the cover panels of the lifting column L to S aside (Fig.9) and unscrew the inserted cover screws, if necessary .
- Attach the inner cover panel L to the lifting column (Fig.10).
- Let the 6 threaded bolts (↗/Fig.10) welded to the cover plate L engage in the lifting column chassis.
- Fit the cover plate M to the lifting colum (Fig.11) and fasten it to the lifting column chassis with 6 cover screws.

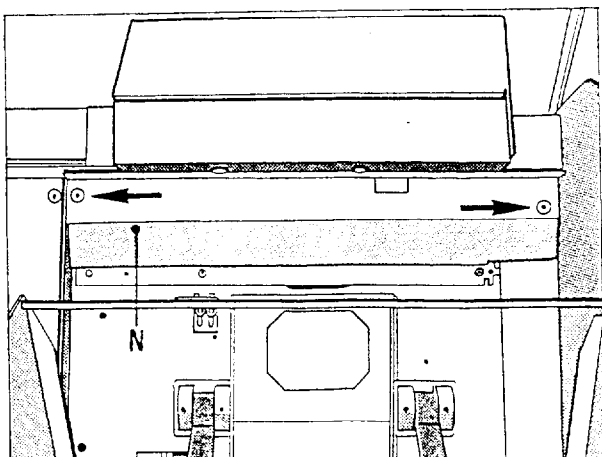


Fig. 12

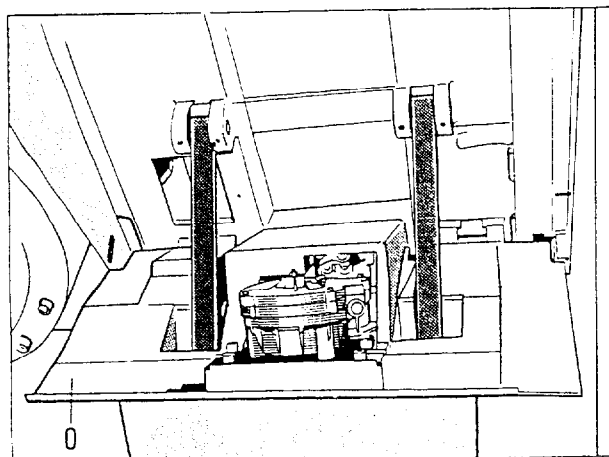


Fig. 13

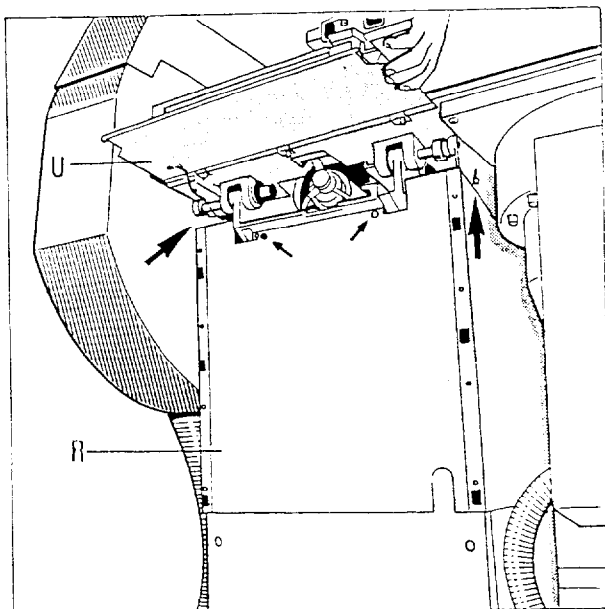


Fig. 14

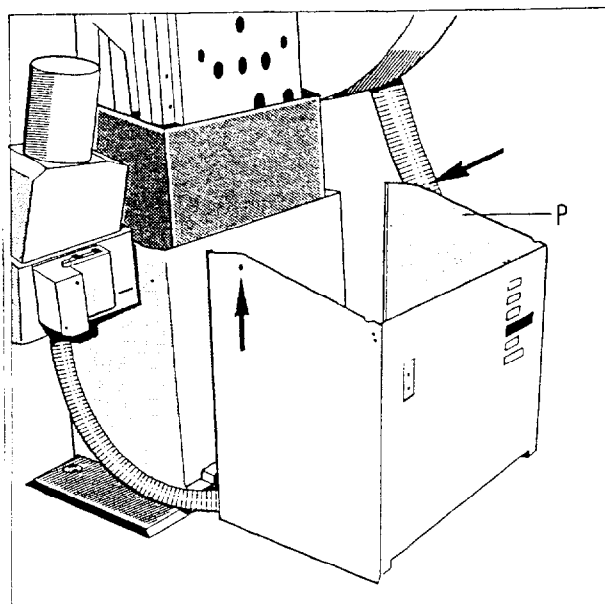


Fig. 15

- Move the unit into the  $+88^\circ$ - position.
- Install the cover plate N (Fig.9) on the bottom of the table (↗/Fig.12).
- Place plastic part O (Fig.9) on the lifting column according to its shape and attach with screws (Fig.13).
- Move the unit back into the  $0^\circ$ - position and switch off again.
- Fit the cover plate R to the lifting column and fasten it with 2 screws at the top - when doing this, hinge up the flap (U/Fig.14).
- On the opposite lifting column side, fit the cover panel P (Fig.9) to cover panel R and fasten with 8 M4 nuts (Fig.14); at the same time, let the 2 guide bolts (↗/Fig.15) engage in the elongated holes (↗/Fig.14) of the guide of the plastic strip.

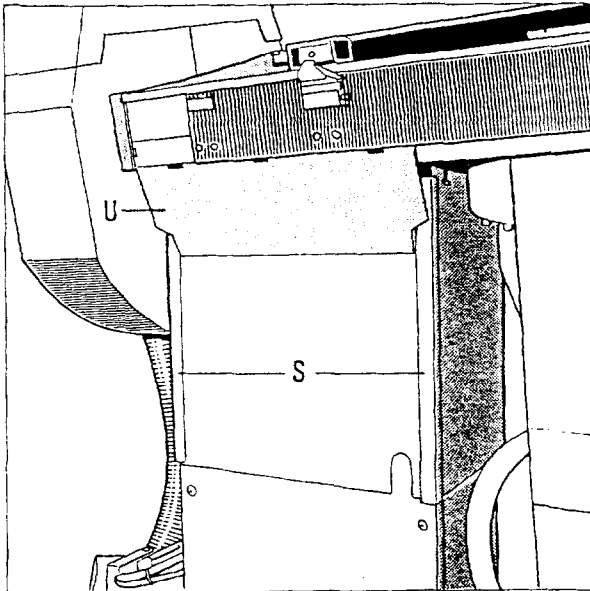


Fig. 16

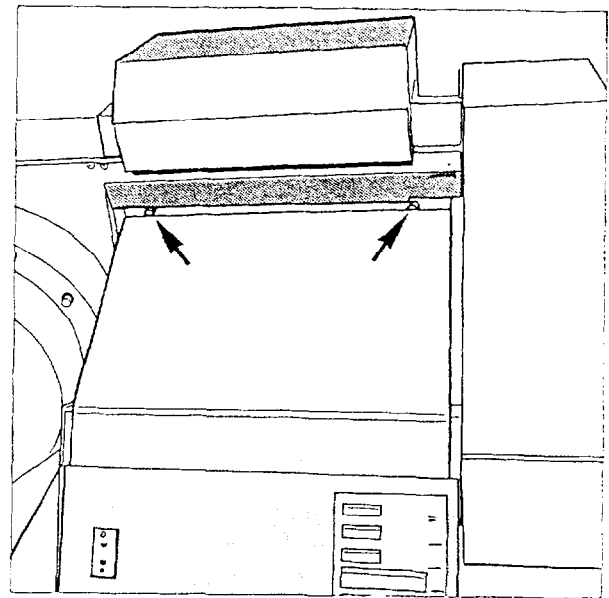


Fig. 17

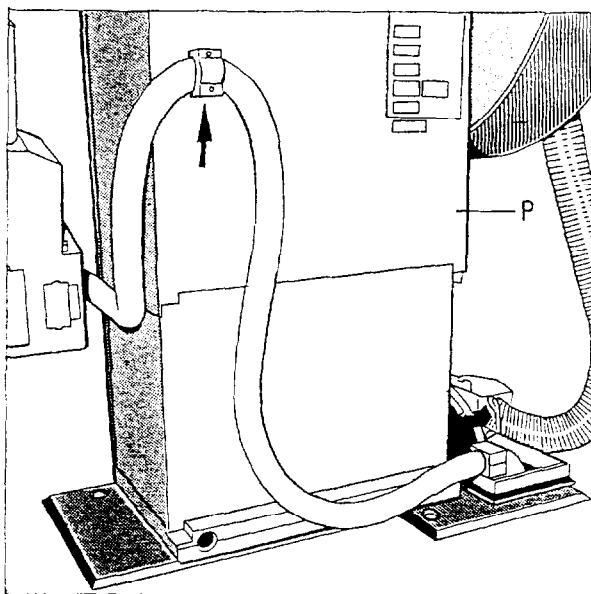


Fig. 18

- Hinge flap U down against the lifting column cover (Fig.16).
- Fit the two cover brackets (S/ Fig.9) to the two lifting column edges (Velcro tape) so that the bolts of flap U are guided (Fig.16).
- Withdraw the plastic strip from the cover panel P and attach the metal rail to the lower table side (↗/ Fig.17).
- Install the corrugated hose holder (↗/ Fig.18) on cover panel P and fasten the corrugated hose so that unimpeded unit movements are possible.

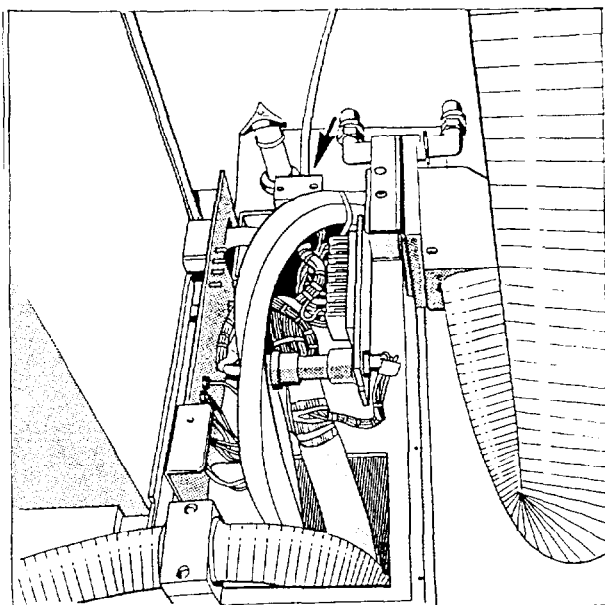


Fig. 19

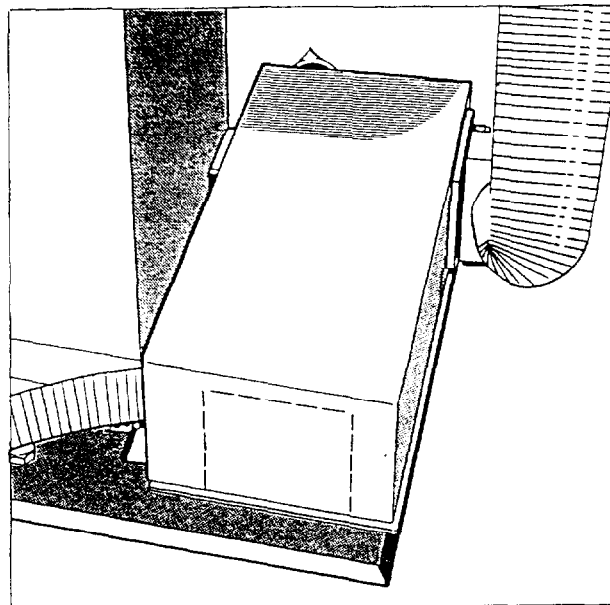


Fig. 20

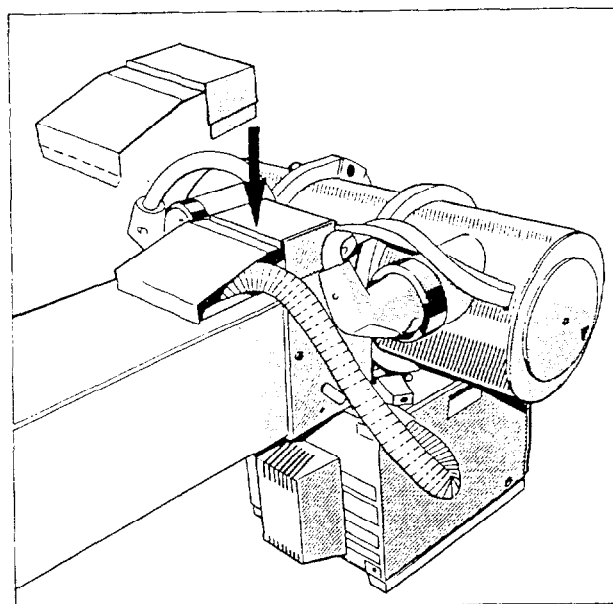


Fig. 21

## Attaching other cover panels

- If not already done, plug the connector of the footswitch connection cable into socket X1 in the cable distributor and fasten the cable with the cable clamp (↗/Fig.19).
- Place the cover over the cable distributor and fasten with screws (Fig.20).
- Fit the cover bracket to the upper side of the tube assembly and allow it to lock in place (Fig.21), and run the cables according to Fig.21.
- Connect the ground wires to the front panels.
- Insert the front panels of the standard cabinets and fasten them with screws.

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Cover page	Page Revision updated. Table Revisions newly included. Table of contents updated.
Chap. 1	Completely revised.
Chap. 2	The character ☒ has been replaced by ≪ on all relevant pages. /Page 4 Fig. 9b newly inserted.
Chap. 4/Page 1	"Caution: The line must be de-energized", newly inserted.
/Page 2	Fig. 5 added. "Connection of the double-shielded rotating anode cables ...", newly inserted.
/Page 3	Edited
/Page 4	"Connection of high-voltage cables", newly inserted.
/Page 5	"Acoustic signal (fluoroscopic timer) ...", newly inserted. Table, newly inserted. "Data printer (option)...", newly inserted.
Chap. 5/Page 1	"General final work..." and Fig. 1 removed.
/Page 8	Completely deleted.
Chap. 6	Newly inserted.

TD RX 6 / Fleischter  
TD RX 1 / Schlee  
TDU 3 / Hay

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